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Railway Age

SECOND HALF OF 1921—No. 7 NEW YORK—AUGUST 13, 1921—CHICAGO SIXTY-SIXTH YEAR

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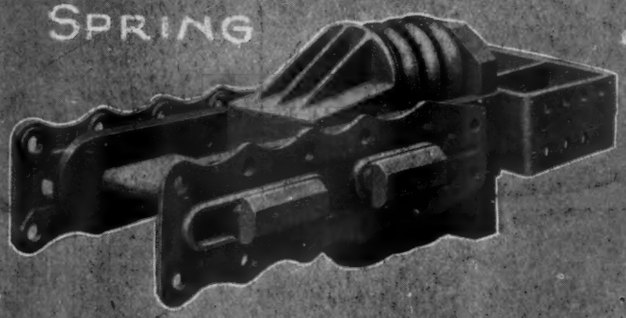

FARLOW

FROM THE RAILWAY AGE
OF JUNE 10 1921
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...ny sections of the country is evident ...
...ar draft timbers and longitudinal sills combined, ...
not exceed three per cent of the total.

On another railroad, during a recent period of 13 months, there were 889 wrecks or accidents caused by the failure of freight car parts. The largest single item in a classified list of the defects was 144 accidents caused by couplers pulling out. Including with this the other defects pertaining to the draft gear and its attachments, a total of 222 accidents, or 25 per cent of the whole, were attributable to the group.

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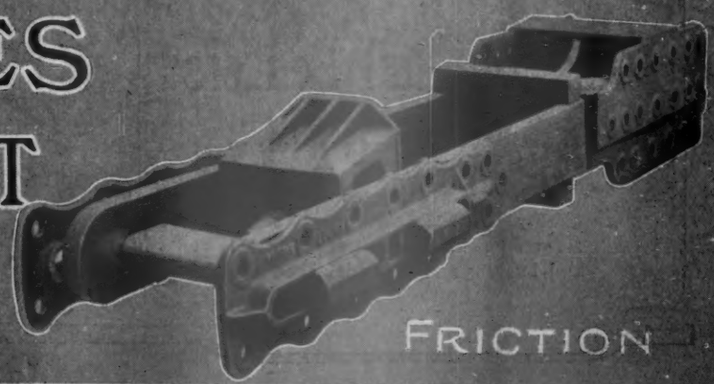

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NEW YORK BALTIMORE
THE T.H. SYMINGTON CO.
CHICAGO ROCHESTER

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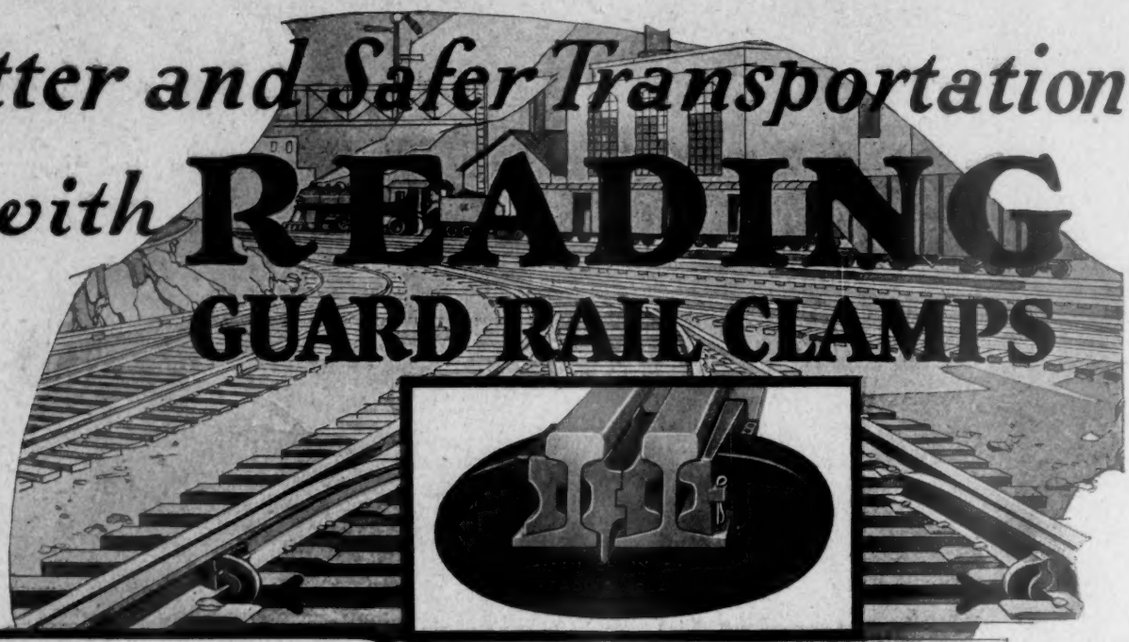

Reading Guard Rail Clamps act as shock absorbers, eliminate strain on yoke and prevent pulling in of stock rail at these points.

The wide end construction of yoke prevents clamp from slipping from its right angle position. The yokes are interchangeable and can be used on various rail sections. Applied without disturbing guard rail.

Clamps made in three sizes.

Reading Rail Benders

come in five sizes and are made to fit all sections T-Rail up to 150 lbs. Frames are made of high quality heat treated cast steel; screws made of cold rolled steel and bushings of a special bronze.

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Railway Age

EDITORIAL

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Increasing Track Capacity at Moderate Costs

Railroad managements are confronted with many and varied problems which will increase in their complexity as traffic gradually approaches normal. In many localities congestion will tend to occur and one of the important subjects to consider at present is how best to prepare to prevent it. Those operating and engineering officers who are not familiar with what signaling has accomplished may naturally consider double track as the logical remedy. Before plans are definitely determined upon it is well to consider the results which may be obtained by the installation of signals in connection with the possible relocation of passing sidings, water and coaling stations, etc. The Signal section of the American Railway Association in its latest report, submitted charts and data concerning the location of automatic block signals with reference to *time spacing*. The proper application of this information will demonstrate to operating and other officers the extent to which a signal system will aid in getting trains over the road in shorter time.

Progress of Funding Legislation

There seems to be little hope of immediate action by Congress on the President's recommendation that the railroads' obligations to the government be funded. The Senate has been planning a recess of a month or six weeks and the fear has been expressed that if the railroad funding bill is brought up at this time the consideration of the measure will preclude the possibility of any vacation for the senators. The matter is largely in the hands of the President. If he insists on immediate action undoubtedly his wishes will be respected. Even in that event, however, discussion and conferences would require some time. If the President does not urge immediate consideration of the measure final action on it cannot be expected for a month or two. Favorable action by Congress on the bill is a matter of considerable importance to the railroads and to business generally. Any steps that may be taken, therefore, to expedite its passage without working undue hardship on Congress will naturally meet with general favor on the part of those who have the interests of our transportation system at heart.

Rail and Motor Transport in England

The railroads are so fully occupied at the present time with solving the problems of rail transportation that any suggestion that they enter the motor truck transportation field on a large scale could not be expected to meet with a cordial reception. In this connection, however, it is interesting to note that the railways of England are asking that they be permitted to enter that field. The situation in Great Britain, of course, is considerably different from that in this country. The average length of haul of freight in that country is under the limit within which it is claimed in some quarters that motor trucks can operate economically. Unquestionably there is a certain amount of l.c.l. traffic moving over short distances on railways everywhere which is carried at a loss and it would be well for the motor trucks to get this business. At the same time if motor transportation companies work independently of the railroads there will be some wasteful competition between the two agencies. Some traffic will be hauled by road which could better be moved by rail and vice versa. The same holds true as regards passenger traffic. If the English railways are interested in moving freight and passengers by motor truck they should be granted that privilege. Only by co-ordinating the two systems of transportation under one management can the selection of the most economical method of transport for given shipments be assured. Economies effected in this manner redound to the benefit not only of the transportation companies and shippers but to society as a whole.

Good Food and Comfortable Quarters

The part which poor food and poor sleeping quarters play in making railroad employees dissatisfied with their jobs cannot be overestimated. This factor is especially important in the case of train and engine employees who spend the greater part of their time away from home. Often, especially at outlying terminals, the only hotels and restaurants available are of the lowest order. It is of course neither feasible nor desirable that expensive hostelries be provided at such points but plain, wholesome, well cooked food and good, clean beds are necessary and every effort on the part of railway officers to secure these accommodations for their men at reasonable prices will pay many times over in improved morale. Many hotels and restaurants adjacent to railroad yards are under obligation to the railroads for certain concessions. In such cases criticism of the service or the prices by a trainmaster or superintendent would have added weight. If the hotel is in no way connected with the railroad the suggestion that the company was considering the erection of an establishment of its own might be effective. This is a matter which can probably best be handled by division officers. A trainmaster or a division superintendent is in a position to know the kind of treatment his men are getting and, if it is not the best, a few well chosen words from him to the hotel men from time to time should at least serve to improve conditions somewhat. If food and lodging away from home were more attractive, layovers of a few more hours would be less odious and demands for punitive payments less insistent.

A Proper Respect for Signals

Occasionally operating officers indicate that they regard automatic signals as a liability rather than an asset in the economics of train operation. Such an attitude cannot help but be reflected by the men who operate trains under the automatic block signal system. The employees may be more inclined to take a chance in order to make their running time than they would be if the officers had impressed them with the true function of signals in expediting train movement while at the same time promoting safety. It is an economic necessity for signal indications to be acted on properly, for otherwise the investment in them is ineffective and serious results may

occur, the alibi then being that "the signals failed to work properly." Recently two opposing trains, a passenger and a freight, very nearly collided in single track automatic signal territory. At the investigation the blame was laid on the signal controlling the entrance to the single track section, the trainmen saying they received a false proceed indication. The signal department could find no evidence of signal trouble. Shortly afterward two freight trains very nearly met in a similar collision and again the signal was blamed, although it was found to be working properly. Naturally, the confidence of the operating officers was lowered; until a quiet investigation disclosed the fact that, to make time, some of the train crews were in the habit of disregarding the stop indication of the particular signal in question. This instance, which is typical of others, shows the importance of proper signal observance and discipline. Operating officers can do much to instill proper respect for signals by their own attitude. In fact, this is the first essential to strict observance by their men.

Highway Construction and Transportation

One of the many factors which have contributed toward past congestions of traffic has been attempts to move supplies and materials for road building when seasonal traffic has been moving in large volume. The railways can well afford to lend their aid to Secretary Hoover in his endeavor to secure increased economy and efficiency in highway construction. In a letter addressed to the governors of the various states he has urged the letting of contracts for road building in the fall instead of in the winter and spring, supporting his position with a report made for him by a committee representing the larger engineering societies, outlining the advantages which would accrue. The railroads are concerned chiefly with the effect which such a procedure will have upon transportation. The first advantage apparent to the railroads will be that the movement of contractors' supplies and materials will be advanced some two months or more, thus bringing the peak of the demand for movement of this traffic earlier in the year. The second advantage would result from the longer working season, which would distribute the demand for freight cars over a longer period and permit a more uniform utilization of railway equipment. In the middle west where letting of contracts in the fall has been practised successfully, an increase of approximately 46 per cent in time for grading and 37 per cent in time for concreting was obtained. Experience in recent years, especially in 1919 when the major portion of the country's hard surface highway projects was carried over, has been such as to bring about increased favor for this plan. The amount of money allotted for highway construction in 1922 is large. The amount of transportation required will be, as a consequence, large in proportion and, if there is any revival of general business by next spring, shippers of road building materials will benefit by shipping them early.

Standards of Shop Practice

While labor troubles constitute the most difficult problem confronting railroad managers today, there is another ever-present problem in the establishment of satisfactory standards of shop practice. It is essential that these standards be safe and productive of economy, therefore they should be established only after thorough investigation. Each railroad should define its own standards, to be followed on the entire system and continued only as long as economical; not after they are obsolete and have been displaced by up-to-date practices. Good standards will support themselves and, as was recently said, "The surest way to kill a poor standard is to insist on it to the letter." It is not maintained that standards should be so rigidly adhered to that all initiative of local officers is destroyed. On the contrary, there should be a continual search for improved methods. The important point to guard against is the adoption of so-called improved methods before a thorough investigation has demonstrated that they are time and labor-savers. When the parts of cars and locomotives fail, shop superintendents, master car builders and master mechanics often arbitrarily change designs in accordance with their personal ideas and without finding out what the real or fundamental cause of the trouble is. The duties of these officers are in reality limited to responsibility for maintenance and production, and the best results are secured when all changes are made by the designing engineer who keeps in close touch with the maintenance men and thus learns how various locomotive and car parts are standing up in service. In addition to the possibility of standardizing both general shop practice and many small locomotive parts, considerable economy can be effected by standardizing small tools. In this case the problem is to determine the forms of tools demonstrated by experience to be most satisfactory, and take steps to insure that these tools are manufactured in quantities and distributed to all points on the system. To be of the greatest benefit, it is essential that shop standards be arranged in substantial, systematic form, so that they can be furnished to all interested and be enlarged and revised when necessary.

Revise the Maps

It is all too frequently the experience in planning or making property alterations or additions and in meeting situations imposed by operating conditions where the use of a map is at least desirable, to find before or during the performance of the work, that the maps, prints, diagrams or sketches covering the point in question are incorrect or lacking in the necessary detail. This is particularly the case where underground or otherwise not easily accessible, but nevertheless important, layouts such as waterlines, sewer pipes, plumbing or wiring; are the subjects of consideration. A bad leak occurs, which for the lack of a complete map, defies efforts to locate it; a break, a clog, a fire or some other unusual condition arises which involves the finding of a forgotten valve, the location of old pipes for the purpose of either utilizing them or of avoiding them, or the complete study of existing layouts with a view to making important changes. When the maps available are complete and correct the performance of the work involved is greatly facilitated, but when incomplete and incorrect, as they too frequently are at the very point where they are needed most, namely, at terminals, they often not only do not serve the purpose for which they were prepared, but also give rise to expenses which may be justifiably attributed solely to their deficiency. Manifestly they should be complete and should be correct and up to date, and all parties who make use of maps usually will find it to their own ultimate advantage to see that they do conform to these standards. Where maps are in error or incomplete usually it is not difficult to account for the cause. Although an accurate representation of the work at one time, alterations or additions to existing layouts have been made at frequent intervals by operating or other forces about which the engineering department has not been informed or the recording of which it had neglected altogether or postponed until the proper location of the work could only be estimated; or again local conditions governing at the time may have necessitated changes in the original plans which the individual in charge, uninstructed, neglected to record. But whatever the origin of the deficiency, the fact remains that the map should be correct and to that end, whether it requires a closer supervision by the engineering departments of all work of a kind done by operating forces, or the frequent inquiry and inspection of his territory by the local engineer, the maps should be kept revised.

The Esprit de Corps

In recent months a great deal of emphasis has been laid upon the wisdom of directing close attention to the study of all manner of processes and practices and of methods and machinery with respect to their ability to promote economy, better service and a more rapid rehabilitation of the railway properties. At a time when the prosperity of the railroads rests more upon their efficiency of operation than ever before, when their expenses are greater and their income far less than a prosperous condition could justify, who would say that such emphasis was not well placed? If there are practices in use which no longer have anything to recommend them but the years through which they have been perpetuated, now indeed is the time to find them out; likewise, the opportunity for improvement in the machinery or the potential benefit in its replacement. But by all means, in doing this let us not be unmindful of the man. In war times much was heard of the "Esprit de Corps," when it was applied to the army. Now we might well apply it to the railroads. At that time the attitude manifested by the men was a fundamental, all-important consideration, the nature of which was a close index of the probable success of the undertaking. The railroad situation is one different in degree only—not kind. To attain even fair results there must be alive the willingness to work as well as the ability to do so, and along with it fidelity of purpose, enterprise, pride and loyalty. Without forces of this kind active in some degree, little can be accomplished with all the attention given to machinery and methods. There may be some industries where the man need be considered scarcely more than a mechanism, but this cannot be said of the railroads. There is too much diversity of occupation and of conditions and too wide a distribution of the immense and heterogeneous constituency. Here a proper "Esprit de Corps" is essential, and those officers do wisely who recognize it and exert themselves constantly to maintain it.

A Problem of Organization

During recent months the labor situation has completely changed. From a period featured by an acute shortage the country has passed into one marked by a labor surplus. This situation has arisen because of the general let down in industrial activities and presents to employers of labor a problem hardly less important than that facing them during the shortage. Then the problem was to find the men for the jobs. Now it is to carry on the reduction of forces in such a manner as to avoid completely disrupting the organizations. Anyone experienced in labor supervision on the railroads knows well the difficulties that must be overcome in building efficient working forces from the ground up. In the present situation the more fortunate roads will, in all probability, find it feasible in the force reduction to stop short of the danger point and retain in service the more experienced men of all departments. On the other hand the less fortunate roads may find it necessary to reduce forces, in certain departments, to the point where the organization is seriously injured. Such roads, on the revival of business, will find themselves faced with a difficult task; that of recruiting and bringing to a point of efficiency a new organization. At least one industrial concern which has found it necessary to dispense with the services of experienced and valuable men is taking steps which promise to lighten the task of getting back to normal on the resumption of business. Its plan is to first impress on the employees the fact that the lay-off is temporary. Representatives of the company keep in touch with the men personally and by letter during the period of idleness. Blanks are forwarded to the men on which any change in address may be reported. In certain instances temporary work has been found for the men with other concerns. All of this is done in such a way as to convince a man that he is in fact an essential unit of his company. There is no apparent reason why some similar plan cannot be adopted by roads which temporarily have had to lay off men. Such a course will, in the long run, prove advantageous both to the managements and the employees.

Railway Traffic Standing Still

IT IS DIFFICULT, if not impossible, to draw from the recent trend of railway traffic any rational conclusion regarding future business. The total number of cars loaded with freight in the four weeks ending on July 23 was 2,981,106. This was slightly less than in the four preceding weeks, but the small decline can be entirely accounted for by the fact that the week ended July 9 included the 4th of July holiday. The car loadings mentioned compare with 3,559,081 for the same weeks in 1920, and 3,365,049 for the same weeks in 1919. The decline in shipments as compared with those of 1920 and 1919 was substantial and negative past indications of a possible revival of traffic such as occurred in the latter half of 1919.

The statistics of car loadings make it easy to locate the cause of the small freight movement. The total volume of agricultural products being shipped is very large. The movement of grain is much heavier than in either 1920 or 1919. Shipments of merchandise, which include mainly the higher grades of manufactured products, also are larger.

On the other hand, shipments of the bulkier raw materials used in manufacture, especially forest products and ore, and also the movement of coal, are almost extraordinarily small.

The coal situation is unprecedented. Never since reliable statistics regarding the production and transportation of coal have been kept have shipments of bituminous coal been relatively so small as thus far this year. The years 1914 and 1915, like 1921, were years of business depression. Since then, however, the population and producing and consuming capacity of the country have largely increased. Nevertheless, in the first seven months of 1921 shipments of bituminous coal were 12,000,000 tons less than in 1914, and 2,000,000 tons less than in 1915. Compared with other years they range from 29,000,000 tons less than in 1919 to 110,000,000 tons less than in 1918. It is a remarkable fact that while there has been such a great reduction in shipments of bituminous coal, the amount of anthracite shipped thus far this year has been slightly larger than last year. Coal ordinarily constitutes about 35 per cent of the tonnage of the railways. There can be no substantial increase in their total traffic while shipments of coal continue so small.

Practically all recognized authorities on business conditions agree that underlying conditions are improving. Bank reserves are increasing, interest rates are lower and prices in general are becoming more stable. The farmers are selling their grain and getting money with which to pay their debts and increase their purchases. While the movement of railway traffic has remained practically unchanged for three months, railway net earnings, as a result of recent reductions in expenses, are bound to show increases. If, in addition to increased net earnings, the railways receive the payments from the government contemplated by the plans of President Harding's administration they will be able substantially to increase their purchases. In fact, they already have begun to do so. Increased purchases by the farmers and the railroads will substantially improve general business conditions.

The prolonged stagnation of railway traffic is disappointing, but it is impossible to believe in view of the general situation that there will not be in future months a slow but steady increase of traffic and earnings.

The Rail Problem

IT IS NOW TEN YEARS since the rail problem was brought forcibly to the attention of railway officers by the epidemic of failures which occurred during the winter of 1911-12. They have been continuously studying this problem ever since. While many independent investigations have been made, they have centered to a large extent in the work of the Rail Committee of the American Railway Engineering Association. This committee has presented numerous reports of special investigations to determine the influence of various conditions on the quality of the steel. These studies have undoubtedly contributed to the improvement in the character of the rails now being rolled, as far as wear is concerned. However, it is also true that similar improvement has not been evinced in the quality of the rails, as measured by freedom from failures. In fact, rail failures are becoming more numerous on many roads, and this is causing much concern to railway maintenance officers.

In an effort to secure better material, the Rail Committee prepared a specification which was adopted by the American Railway Engineering Association in 1920, and which imposed a number of new restrictions on the manufacturers, which were designed to eliminate defects causing failures. As pointed out by G. J. Ray, chairman of this committee, at the annual convention last March, the manufacturers are unitedly opposed to this specification, either refusing directly to accept orders for rails to be rolled under it or placing such a high premium on them as to accomplish the same purpose, basing their position largely on the contention that the roads have not proved the necessity for these restrictions or the fact that conformity with them will eliminate the present defects.

The result is that there is now a deadlock between the railways and the manufacturers, while the rails continue to fail and to endanger traffic. Such a condition should not be permitted to continue. The relatively large number of rail failures is a reflection on the ability of the manufacturers to produce sound rails and only to a lesser extent on the railway engineers who accept them. The situation demands action, particularly to determine the causes for the various defects contributing to these failures with such conclusiveness that the proper remedies can and will be delayed. Undoubtedly the main things needed are less controversy and more co-operation between the railways and the manufacturers, and closer concentration on the causes and remedies of the more serious kinds of failures.

More Railway Security Owners Than Employees

THE NUMBER of stockholders the railways have is ascertainable with approximate accuracy, since the names of practically all stockholders are shown on the companies' books. Taking the railways as a whole it has long been believed that the number of owners of their bonds is larger than the number of their stockholders, but it is more difficult to ascertain the exact number of them.

The Northern Pacific, using the best sources of information available, recently had a count made of its bondholders and found that there were approximately 37,000. On March 18, the date on which its stock books closed preceding the annual meeting of stockholders, it had 36,000 stockholders. This makes the total number of owners of its securities 73,000.

The public is prone to show more solicitude for the employees of railways than for the owners of their securities, mainly because it assumes that there are many more employees than owners of securities. The average number of employees of the Northern Pacific in the year 1920 was 35,244, while it now has about 30,000. In other words, the Northern Pacific has more than two security owners for every employee.

The following table shows the number of employees and the wages paid, the number of bondholders and the interest paid, the number of stockholders and the dividends paid, by the Northern Pacific in 1920:

Number of employees	35,244	Total wages	$66,503,794
Number of stockholders	36,000	Total dividends	17,360,000
Number of bondholders	37,000	Total interest	12,134,438

It will be seen that while the railroad had twice as many bondholders and stockholders as employees, the wages paid by it were more than twice as large as the total interest and dividends paid.

The ownership of the Northern Pacific's stock and bonds may be more widely diffused than that of the average railway, but it is probably true of the railways as a whole that the number of people who own their securities is not far from twice as large as the number employed by them. The Northern Pacific is not a typical road in one important respect. It is a relatively prosperous railway and the amount of interest and dividends paid by it is larger in proportion to the wages paid than is the case with most railways.

The wages paid by the railways as a whole increased 285 times as much between 1912 and 1920 as the total interest and dividends paid by them to their bondholders and stockholders in spite of the fact that the bondholders and stockholders probably outnumber the employees by two to one. And yet labor leaders constantly cry out that the employees are oppressed for the benefit of a few Wall Street magnates, who, they say, "own" the railroads!

The Railways' Interest in Highway Construction

THE HIGHWAY CONSTRUCTION program is today assuming vast proportions. Starting more or less locally in the vicinity of the larger cities a few years ago, it has today become national in extent and its contemplated expenditures aggregate vast sums of money. It is estimated that approximately $390,000,000 was spent for this purpose in 1919, while the amount available for highway construction work in 1921 has been placed at $1,394,000,000.

Although this program may at first glance appear to be outside the scope of railway activities, it is in reality of concern to the roads from a number of angles. From the traffic standpoint it has been estimated that the railways must transport 100 carloads of equipment and materials for every mile of highway constructed. However, another and even more important angle to the railways is the fact that they are among the heaviest tax-payers and are therefore interested in the proper expenditure of the funds to which they contribute, to secure roads of the proper character of construction. They are interested for the same reason in the proper use and maintenance of these roads after they are built. As transportation agencies they are also concerned with the expenditure of these funds for the development of co-ordinating arteries radiating from their lines rather than paralleling them.

Up to the present time the highway program in general has been unco-ordinated, both as to the location of the roads and as to their character of construction. Each local unit, state or county, has proceeded to improve those roads which best serve its local needs without reference to a comprehensive program. It has likewise selected the type of construction according to its best information (or lack of information). There has been no central agency which has led in the development of standards of construction to determine those most economical. In fact, most of the constructive work which has been done in the development of highway standards

has been done by those who are promoting the use of their materials in this work.

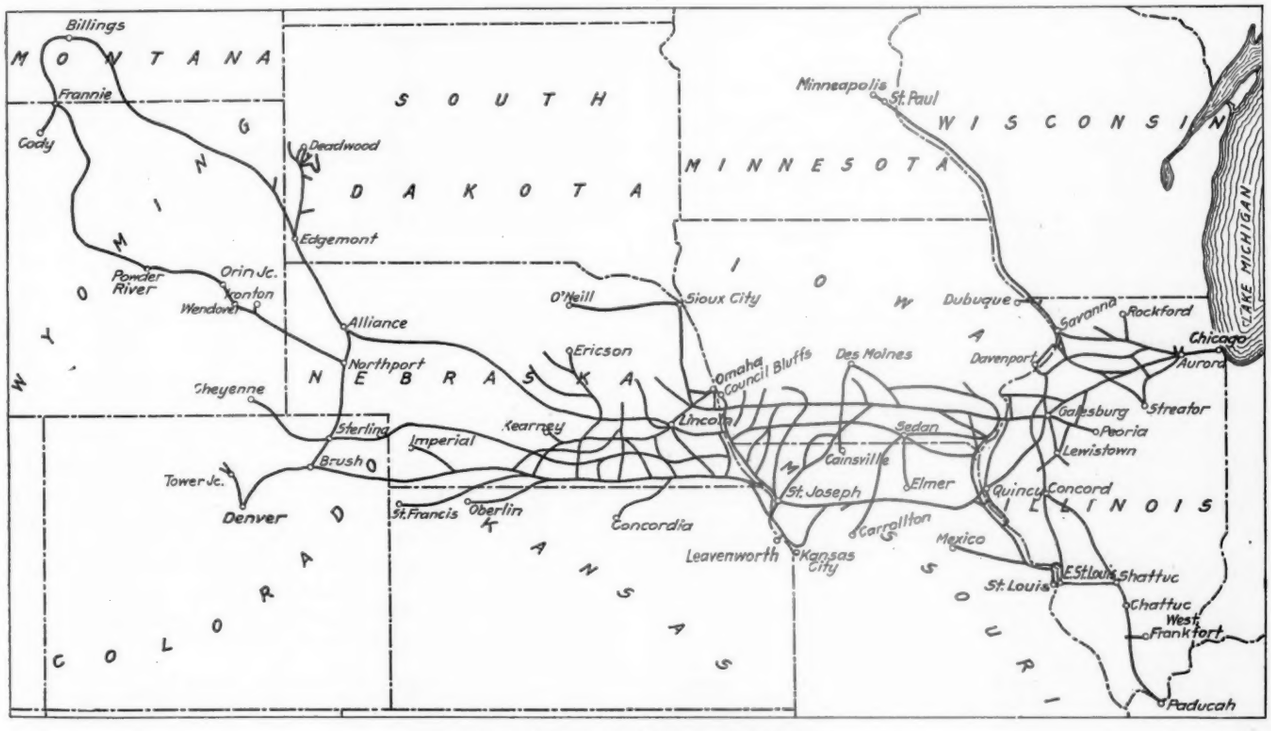
In spite of the large expenditures which have already been made and the far larger ones now being made or in immediate prospect, the feeling prevails in many quarters that we still have much to learn regarding the types of construction most suitable for various local conditions and classes of traffic, and the rapid deterioration of many of these roads of even recent construction supports this contention. The railways who guard their own expenditures most carefully by trained staffs of specialists have a right to expect that the public authorities to whom they will turn over large sums of money in taxes of one kind or another within the next few months, will exercise similar care. This will involve far more engineering study and design than has been given most highway construction to date.

Chicago, Burlington & Quincy

IF A MEDAL were to be awarded to the railroad that has secured the most publicity during the past several months, there would probably be a unanimous decision in favor of presenting it to the Chicago, Burlington & Quincy. Through the application to the Interstate Commerce Commission as a property; one would be merely adding to a wealth of material that has already been published.

The question that would be more worthy of discussion might better be the manner in which this high-grade and prosperous carrier has fared under federal control and the progress it is making in meeting the many problems resulting from the aftermath of government operation. Analysis shows that in important respects the experience of the Burlington has not been exceptional. Its operations have shown an increase in gross earnings similar to that of most roads, the usual still greater increase in expenses and the like resulting decrease in net which are typical. The Burlington's standard return for the period of federal operation was $33,360,683. In 1918 it earned for the government a net railway operating income of $25,016,100; in 1919, $25,156,532. In 1920, including two months of federal control, six months of operation under the guaranty provisions of the Transportation Act and four months of private operation, the company's net railway operating income, as reported in the December monthly statement to the Interstate Commerce Commission, was but $8,012,045.

The year 1920 was the busiest in the Burlington's history with the exception of 1918. In 1920 the road carried 47,233,256 tons of freight as compared with 47,264,416 tons in 1918. The revenue ton-miles in 1920 were



The Chicago, Burlington & Quincy

covering the steps proposed by the Hill lines to refund the Burlington joint 4's and as a result of the sale of the new issues, the property and its operations were put in the limelight for an extended period. Searching analyses on the part of financial houses and others were made public, and the final result was that the Burlington came through the tests with a record of 100 per cent. Someone has suggested that the factors to determine whether a railroad property will be successful are chiefly three—its strategic position; its physical characteristics and its management. The Burlington was given a grade of A on all three points and presumably now stands before the public as an example of what an American railroad ought to be. In view of all that has taken place, it is hardly necessary to discuss the Burlington

14,130,364,374 as against 14,162,605,344 in 1918. In 1920 the total freight revenues were $131,646,733; in 1918, in which year traffic was carried at lower rates, the freight revenues were $104,492,837. Total revenues in 1920 were $186,872,918; in 1918, $144,172,769. The increase in revenues as between the two years was thus about $42,700,000. The increase in operating expenses as between the two years was $49,000,000. To carry this comparison further, attention should also be given to 1916, in which year the Burlington did less business than in either 1918 or 1920, but in which it earned the largest net. The increase in total revenues in 1920 over 1916 was $77,700,000; the increase in operating expenses $96,000,000.

These facts are brought out in this detail because they

are of special importance as far as the Burlington is concerned. The Burlington is noted for its conservative financing and the practice that has been followed over an extended period of years of putting earnings back into the property for the purposes of bringing it to higher standards and of enabling it to operate more efficiently and economically. The management of the Burlington seemed to have an almost uncanny way of utilizing its funds to the best advantage. As a result it was enabled to derive full advantage from the growing traffic of its increasingly prosperous and expanding territory and, in short, to benefit in an unusual degree from the working out of what the economists call the law of increasing return. It is not advisable to put too much stress on operating ratios. However, it is a fact, nevertheless, that over a period of years the operating ratio of the Burlington showed a steady decrease; in the year ending June 30, 1913, it was 66.59 per cent; in 1916, but 59.74. Since that time, however, the tendency has been the other way; in 1917, it was 64.27 per cent; in 1918, 77.73; in 1919, 78.42 and in 1920, 86.32 per cent.

The increase in operating ratio in these several years can not be attributed to any marked decrease in operating efficiency, although it is to be presumed that the important factor of morale must have suffered on the Burlington during the war just as it did on all other roads. In 1913 the average revenue train load on the Burlington was 484 tons; in 1916 it was 575 tons; in 1918, 669 tons; in 1920, 655 tons. The average revenue load per loaded car in 1913 was 19 tons; in 1916, 20.53 tons; in 1918, 25.78 tons; in 1920, 24.86 tons. The Burlington in 1920 secured a figure of net tons per train, including in this case both revenue and non-revenue freight, of 766. This was the highest train loading of any carrier in the west whose operations are at all comparable with the Burlington's with a single exception—the Great Northern, which had in 1920 net tons per train averaging 777. Further than that the car miles per day on the Burlington in 1920 were 31.8, a high figure. The ton-miles daily per car on the Burlington in 1920 averaged 611; the average for the western district was 503, and for the country, 496. The decrease in net earnings on the Burlington in 1920 came about in spite of efficient operation.

The trouble with the Burlington in 1920 and, at present as well, was the wage scales, the increased costs of fuel and the fact that the traffic to be handled fell off before the benefit of the rate increases in Ex Parte 74 could be realized to counterbalance the increased expenses. In the comparisons which have been given above, comment on the figures for the year 1919 was omitted, because in 1919 the traffic handled was considerably less than in either 1920 or in 1918. However, it may be noted that the ton-miles of revenue freight in 1920 were 18.22 per cent over 1919 and the total operating revenues 21.34 per cent greater than in 1919. As against these increases there was an increase of 33.55 per cent in operating expenses. The increase in revenues as between the two years was $32,861,480; in expenses, $40,526,885.

The reason for the increased expenses is plainly evidenced by the following figures: In 1920, as compared with 1919, the total payroll increased $28,950,520 or 37.83 per cent; the total material expense (excluding fuel) increased $9,554,628, or 39.77 per cent and the total fuel expense increased $5,579,855, or 40.58 per cent. These several comparisons might be carried further, but no doubt enough has been said to show that the Burlington's difficulties, serious as they are, are after all, only those of the railroads as a whole.

The Burlington is in rather a better position than most roads. It should realize rather better than most roads on any improvements that may be brought about in the railway situation. The fact that a road as favorably situated and as efficiently operated as this one should have been so adversely affected as it has been, is, however, rather a clear indication of how serious the railway situation is and has been.

In reviewing the operations of a road like the Burlington, or the Lackawanna, which are noted for their continued physical improvement, one cannot fail to omit reference to the particular projects that may be under way at the time. The Burlington in 1920 had capital expenditures totaling $14,737,456, including $8,516,660 for road, $6,176,945 for equipment and $43,851, general. "Capital expenditures generally," says President Holden in his report, "have been directed toward the improvement of existing property, particularly locomotive shops and terminals, yards and station facilities and primarily for increasing efficiency and economy of operation."

Among the improvements in hand in 1920 were those related to the Chicago union station project; grade elevation through Aurora, Ill.; new engine terminal facilities at Galesburg, Ill., Pacific Junction and Denver, Colo.; second track on the Beardstown and St. Joseph divisions, totaling about 11 miles; work on bridges, including notably the Platte river bridge at Northport, Neb., completed in August, 1920; the installation of 300 miles of automatic block signaling on the Aurora and Lincoln divisions of which 97 miles was completed in 1920, etc. A total of 340 miles of 90-lb. and 100-lb. rail were laid in 1920. During 1920 the Burlington placed orders for 15 six-wheel switching, 16 Mikado and 15 2-10-2 type locomotives and 500 stock cars, a substantial portion of which were delivered before the close of the year.

CHICAGO, BURLINGTON & QUINCY OPERATING RESULTS

Year	Freight Revenue	Passenger Revenue	Total Revenue	Total Expenses	Net Revenue	Operating Ratio	Revenue Tons	Revenue ton Miles	Average Haul	Average revenue Train load	Car load
1912-13	$64,063,856	$21,895,691	$94,374,485	$62,842,891	$31,531,594	66.59	33,389,439	8,791,435,597	263.30	483.83	19.10
1916	77,310,516	21,833,534	109,191,204	65,235,705	43,955,499	59.74	39,278,135	10,923,326,440	278.10	574.69	20.53
1917	87,008,590	24,373,780	122,342,707	78,632,343	43,710,363	64.27	45,364,552	13,143,186,449	289.72	629.39	23.37
1918	104,492,837	28,052,905	144,172,769	112,067,616	32,105,153	77.73	47,264,416	14,162,605,344	299.65	668.81	25.78
1919	107,019,788	35,345,285	154,011,438	120,777,801	33,233,636	78.42	40,235,427	11,952,720,771	297.07	620.97	22.60
1920	131,646,733	36,468,265	186,872,918	161,304,686	25,568,232	86.32	47,233,256	14,130,364,374	299.16	654.85	24.86

The operating results in 1920 as compared with 1919 follow:

	1920	1919
Mileage operated	9,390	9,372
Freight revenue	$131,646,733	$107,019,788
Passenger revenue	36,468,265	35,345,285
Total operating revenue	186,872,918	154,011,438
Maintenance of way expenses	30,263,101	21,487,643
Maintenance of equipment	42,366,974	32,422,401
Traffic expense	1,752,317	1,064,457
Transportation expenses	79,828,378	60,170,510
General expenses	5,191,043	4,183,847
Total operating expenses	161,304,686	120,777,801
Net revenue from operation	25,568,232	33,233,636
Taxes	8,792,978	8,115,392
Operating income	16,702,350	25,086,664
Net railway operating income	12,978,246	22,530,855

Corporate income account is as follows:

	1920	1919
Railway operating income and standard return	$11,230,951	$30,735,006
Gross income	30,706,991	31,881,131
Interest on funded debt	6,816,006	6,669,587
Total deductions from gross income	7,782,627	8,338,660
Net income	22,924,364	23,542,471
Dividends	8,867,128	8,867,128
Income balance	13,826,158	14,173,088

Lackawanna Elevates Tracks Through East Orange

Section Between Newark, N. J., and Orange Forms Closing Link in Suburban Grade Crossing Elimination

THE DELAWARE, LACKAWANNA & WESTERN has recently started work on the elevation of its main line through East Orange, N. J., on the Morristown branch of the Morris & Essex division. This operation involves approximately two miles of track, lying between the city lines of Newark, N. J., on the east and Orange on the west. The work is in reality the completion of the program started a number of years prior to government control, for the elimination of all grade crossings, the addition of a third or express track, and the construction of more modern passenger sta-

Laying the New Temporary Track Alongside of the Old Line

tions in the suburban territory served by it. This work, consisting of a section on the main line to Morristown and one in the vicinity of the Ampere station on the Montclair branch, marks the closing link of the entire program.

The main line section involves the elimination of 11 existing grade crossings, the alteration of numerous street grades incidental thereto, the addition of a third main track, the construction of two new passenger stations and the raising and reconstruction of a third passenger station. The section on the Montclair branch involves the elimination of three existing grade crossings and the alteration of street grades in their vicinity, the provision of a new undercrossing, as well as the raising and reconstruction of one passenger station. With these improvements the grade crossing problem of the Lackawanna will have been virtually disposed of, so far as it concerns the densely populated suburban territory in the vicinity of New York.

Grades Are Increased to Secure Undercrossing Clearance

The present line through East Orange is double track, connecting with a three-track line through Newark on one side and through Orange on the other, with three stations intervening, Grove street, East Orange and Brick Church. From the point where the line emerges from the Roseville cut there is an ascending grade of 0.78 per cent which continues to the East Orange station, running level through the station as well as through the Brick Church station, otherwise being on an ascending grade until it connects with the elevated line through Orange.

The new line will have a steeper grade where it leaves the city of Newark, because of the necessity of securing sufficient elevation through the major portion of the city of East Orange to permit of the construction of undercrossings without too great a depression of the streets involved. This necessary elevation is obtained by the use of a 1½ per cent grade from a point 200 ft. east of the Newark-East Orange city line to Greenwood avenue, at the east end of the Grove street station, the first stop in East Orange, changing there to a 0.78 per cent grade for about 1,200 ft. to North Maple avenue, at which point the line will revert to the 1½ per cent grade, which will be maintained until the East Orange station is reached. From there west, the line will continue to ascend, on grades varying from 0.55 per cent through the East Orange station down to 0.177 per cent through the Brick Church station and finally joining the present elevated line in the city of Orange at a level grade. These grades result in a maximum elevation of the new tracks of approximately 20 ft. above the present track.

The grade crossings to be eliminated will necessitate the construction of six new and independent undercrossings, the rebuilding of an existing structure over the East Orange

One of the Steel Forms Which Is Being Used Between the Old Line and the Temporary Tracks

Parkway, the provision for six other undercrossings as parts of the elevated station and platform structures at East Orange and Brick Church, together with a subway for pedestrians at North Fifteenth street and an overhead footbridge at North Maple avenue. The independent undercrossings will follow the general design used in the construction of similar crossings on the Orange and South Orange work installed in previous years. The designs developed utilize reinforced concrete slabs for the bridge floor, supported by centrally located concrete piers and abutments and in some instances sup-

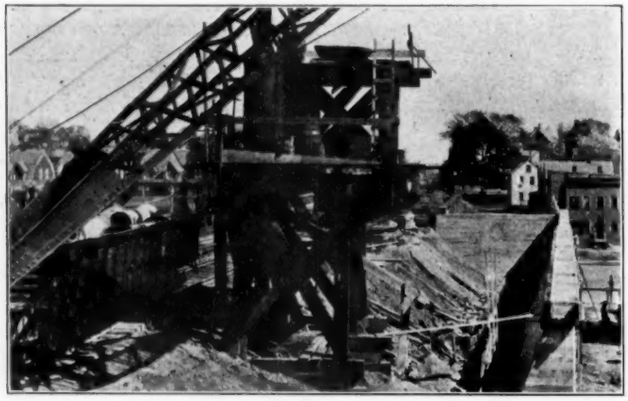
ported by the addition of rows of concrete piers or columns along each curb line. The parapets in this type are made integral with the slabs and where the crossing is skewed are reinforced to act also as girders. The design is such that in either case a clear opening of not less than 16 ft. 6 in. is maintained between the center pier and the curb lines.

Cantilever Flat Slab Type of Viaducts at Stations

The two new stations will be constructed to the north of the tracks, the one at Brick Church remaining in approximately the present location while the East Orange station

At Work in the Vicinity of the Temporary East Orange Station

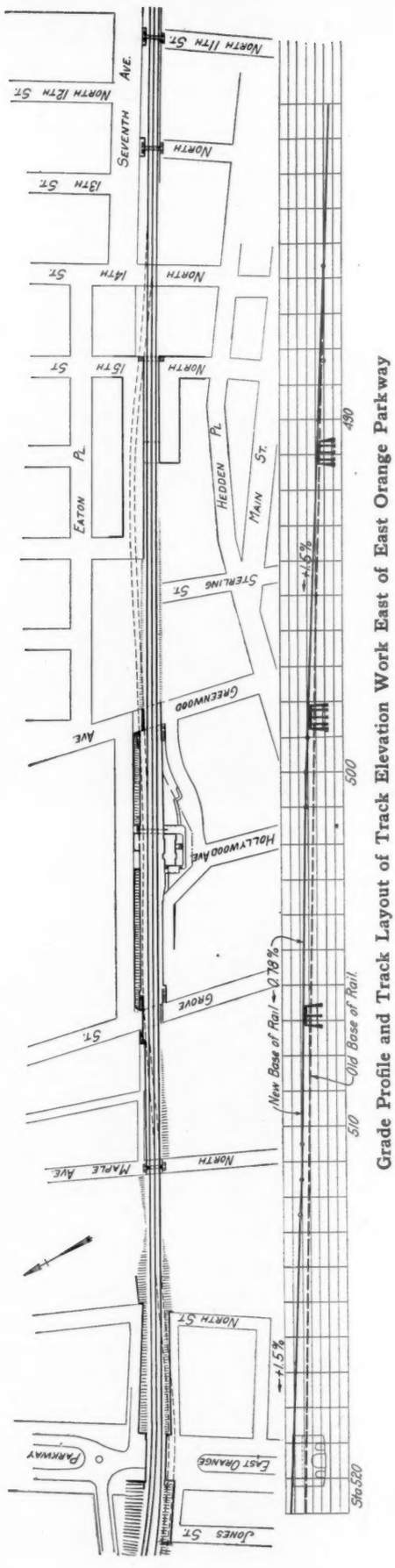
will be located between Main street and Arlington avenue. The tracks at these points will be carried on long reinforced concrete viaducts, with 800 ft. to 1,100 ft. platforms serving the three tracks. The type of construction adopted for these viaducts is the cantilever flat slab type so successfully used at South Orange and Buffalo and will consist of reinforced concrete slabs supported on four longitudinal lines of circular columns at Brick Church and five lines at East Orange. The eastbound main and the express tracks will be served by island platforms, while the westbound main will have separate platforms along the north side of the viaducts. A part of the space under the platforms and tracks will be utilized



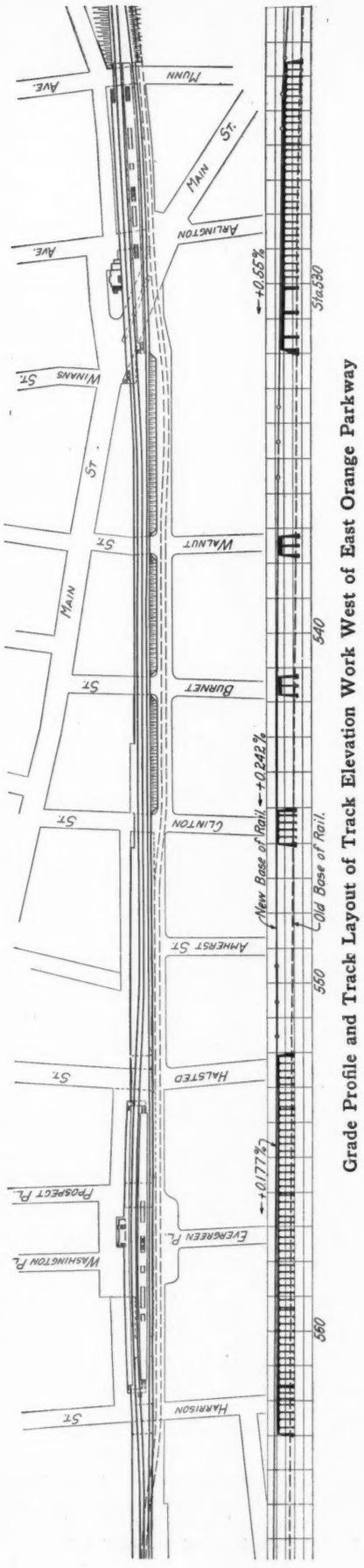
The Start on the Retaining Walls in the East Orange Parkway Section

for additional station facilities, consisting of waiting rooms, ticket booths, etc. The island platforms and the waiting rooms in the stations will be accessible by stairways through the slab structure to the facilities at the lower level, thus obviating the necessity of any crossing of tracks at grade, by incoming or outgoing passengers. The platforms will be covered for a portion of their length and will also have stairs at each end, leading to the streets.

The Grove street station and shelter house will be elevated to conform to the new grade of the tracks, a new street level



Grade Profile and Track Layout of Track Elevation Work East of East Orange Parkway

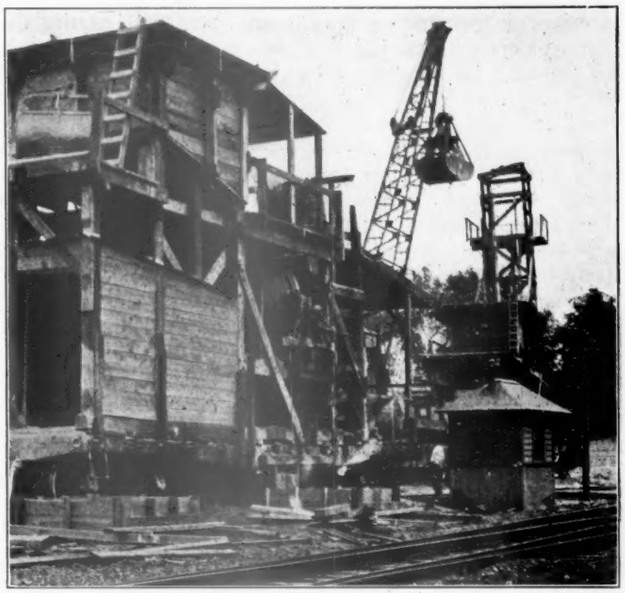


Grade Profile and Track Layout of Track Elevation Work West of East Orange Parkway

floor will be constructed and also a subway connecting the station with the shelter house.

Elevation Necessitates Considerable Changes in Street Grades

The elevation of the tracks through East Orange will necessitate considerable changes in existing street grades in addition to some construction of entirely new streets. In the majority of cases it will be necessary to depress the streets for depths varying from three feet to ten feet in order to secure the required clearances of 13 ft. to 14 ft. In the vicinity of North Fifteenth, Sixteenth and Seventeenth streets, an entirely new street will be constructed on the north side paralleling the tracks and connecting North Fifteenth and Seventeenth streets. From Eaton Place, one block north of the railway, the two last named cross streets will be given a descending grade of about four per cent to the junction with the new or proposed street. From this point the grade will continue to descend to the center of what would be North Sixteenth street if it were cut through. Passing under the tracks at this point, the traffic will be swung to the east again,



Large Capacity Concrete Mixers on Flat Cars and Locomotive Cranes Facilitate the Work

paralleling the tracks and passing over another new street leading into North Fifteenth street. The total length of street changes involved at this crossing will be approximately 1,200 lineal feet and will entail some fairly heavy grading.

Other extensive street alterations will be made in the vicinity of the Grove street station and at the East Orange station, where Main street as well as Arlington avenue will be slightly depressed. At the Grove street station the changes will be the greatest in lineal feet and will include changes in grade, of Grove street, Eaton Place paralleling the tracks, Greenwood avenue and the approaches to the station between Greenwood and Hollywood avenues, totaling altogether about 2,400 lineal feet of new grades.

Temporary Tracks to Be Laid During Construction

On account of the topographical conditions to be overcome the problem really divides itself into two sections, an east end and a west end with East Orange Parkway practically the dividing line. Temporary tracks will be laid throughout and traffic maintained over the temporary tracks until, with exceptions, the new line is ready for service on the east end.

From East Orange Parkway to the connection with the old work at Orange, the problem has been greatly simplified, so far as the construction facilities are concerned, by the availability of a street paralleling the Lackawanna's line. A temporary double-track line has been laid along this street, with a complete automatic block signal installation. At the Parkway heavy concrete retaining walls will be built to carry the two temporary tracks and afterward used to retain the new embankment at this point. With traffic thus completely detoured around the west end of the work, the necessary retaining walls, viaducts, undercrossings and stations can be constructed, the fill made, the new tracks laid and made ready for use.

The temporary relocation of the main tracks has entailed the construction of a temporary station between South Clinton and Burnett streets, and a temporary waiting room between Burnett and Walnut streets, with driveways leading to both and a platform extending the full length of the two city blocks. This will serve the patrons of the present stations at East Orange and Brick Church.

East End Will Be Raised Under Traffic

At the other or east end the problem is much more difficult, because of the limiting conditions, which will require that the temporary tracks be kept somewhere near the present alinement. Leaving the Newark depression the temporary tracks will swing out to the north, paralleling the present roadbed until they reach the east end of the Grove street station. Through this section it will be possible to carry the new work practically to completion without interference of traffic, but from the east end of the Grove street station to East Orange Parkway the work of raising to the new grade will have to be carried on chiefly under traffic. From the point mentioned the tracks swing back onto the present roadbed, following the north edge for a short distance and then cross the present alinement, joining the two temporary tracks laid in the street on the south side of the line. With the completion of the work on either side of the part just described the temporary tracks will be cut into the new lines by means of run-offs and the final raise to grade then made. With three tracks available two will be kept in operation while the third is being raised after which the operation is shifted to another set and the method repeated.

The design and construction of this improvement at East Orange is being carried out under the direction of G. J. Ray, chief engineer of the Delaware, Lackawanna & Western; M. H. Doughty, division engineer; F. J. Nies, architect; A. E. Deal, bridge engineer; M. Hirschthal, concrete engineer, and O. H. Kellogg, assistant engineer, in direct charge of the work. The contractors on the work are the F. M. Talbot Co., H. F. Curtis and Hyde & McFarland.

Photo by ***Keystone.***

Railway Station at Lucerne, Switzerland

Coopering Cars for Grain

E. F. Ford, freight service inspector of the Chicago, Burlington & Quincy, has prepared some useful suggestions to grain shippers, calling attention to the need for careful inspection and preparation of grain cars, particularly at this time when over $4,000,000 out of a total of $6,000,000 paid out in loss and damage claims to grain, represents shortages resulting from causes other than wrecks. Mr. Ford says:

It has been our experience that grain can be moved practically without leakage by the right kind of teamwork on the part of shipper and railroad agent. Our statistics show as many as 100 to 200 cars from a certain station forwarded without a claim, while a nearby station forwarded half as many cars and had several claims, both stations being on the same railroad and the empty cars allotted by the same car distributor and set to elevators by the same train crews.

Investigation of such cases invariably develops that at the station having such good results, there is teamwork on the part of shipper and railroad agent in the inspection and coopering of cars, while at the station having unsatisfactory results we find there is little or no co-operation between shipper and agent. The local will set out an empty car, and if the agent sees a "Fit for Grain" tag on it he has it set for loading, shipper does what he regards a good job of coopering and the car is loaded. Three heads are better than one, and if the shipper would request the railway agent to look the car over after it has been coopered, in many instances defects which escaped the previous inspection would be discovered.

A shipper should not assume that a car is fit for loading simply because a "Fit for Grain" tag is on it. Car inspectors, like the rest of us, are liable to error. The safest course is for the local agent and the shipper to carefully inspect the car before loading regardless of the tag.

Reject any car with weak or broken door or end posts, leaky roof, creosote or oil-soaked floor, or if it is an old car which in your judgment cannot be made grain-tight by a fair amount of coopering.

Look carefully for cracks at side walls caused by short floor boards and cover tightly with paper or burlap, cleating the paper or burlap.

Cover tightly in the same manner all defective places found in car lining, being particular to cover with tight fitting boards end-door openings.

King pins and draft bolts should be covered and cleated.

Grain lining at top and belt rail should be carefully inspected and where not absolutely grain-tight it should be made so by use of paper or burlap calking.

Place paper pads tacked to door post to give smooth surface and tight fit to grain doors, which should be nailed with 12d nails two to each end of each grain door. This is important, since experience proves that 12d nails are the exact size required for safety—this nail gives 1¼ inch penetration into the oak door post and will hold the door in its place through any rough handling car might encounter. Smaller nails give trouble and larger nails require chopping out and consequent destruction of grain door at unloading point.

Cover with paper all grain door cracks and where loading heavier than 60,000 lbs., reinforce with an extra door across joints between first, second and third door joints from the bottom.

Go over the outside of car and securely fasten with cement-coated nails any loose sheathing boards you may find.

Prevent any possible leakage where sills have rotted by using burlap padding nailed to bottom of sill and further secure sheathing by nailing a strip of board over it at the rotted sill.

Before a wagon load of the new crop is taken in, the cautious shipper satisfies himself beyond any doubt that his scales are in good shape, having them inspected and overhauled if necessary. He also keeps a complete record of purchases and of cut-off when elevator is made empty during shipping season, of weights loaded, outturn weights, etc., so that when an actual loss in transit has occurred the shipper is able to present satisfactory proof to the railroad of the extent of his loss.

Team work by shipper and railway agent wins for both, and heads off claims.

The State Supreme Court of Minnesota, on July 22, held that the United States Railroad Administration is liable for damages resulting from a fire which started on the Great Northern tracks near Cloquet, Minn., and swept into that city in October, 1918, causing a loss of many hundred thousand dollars.

Fuel Conservation Plan of the Central of Georgia

Over $30,000 a Month Saved by Consistent Efforts and Co-operation of Employees

ABOUT FIVE MONTHS ago, the Central of Georgia effected a permanent organization of committees for securing the greatest possible economy in the use of fuel. Splendid results have been obtained under this plan and the fuel performance for the months of April and May showed reductions in the unit consumption of approximately 18 per cent compared with April and May, 1920. Based on the average price prevailing during these months, the monetary saving amounted to $36,967 and $38,080, respectively.

The June issue of The Right Way, the employees' magazine issued by the Central of Georgia, is a special number devoted principally to the subject of fuel economy and contains numerous articles by employees in the various departments, outlining the methods they are using to reduce the coal consumption. One of the principal articles is by W. H. Fetner, superintendent of motive power and chairman of the general fuel committee. This article describes concisely the organization and methods which have been applied with such success in reducing the fuel consumption and is therefore reprinted below:

For a number of years in the past the Central of Georgia has followed the usual plans in conducting fuel economy campaigns. Fuel meetings were held at various points on the system and many practices were introduced by which fuel could be saved.

These campaigns are productive of certain results, but, unless followed continuously from day to day and month to month, do not produce any permanent improvement. With this idea in mind, and in order to bring down the coal bill and get results that will be permanent, the vice-president and general manager conceived the idea of a regular fuel organization of a permanent character.

This organization was effected during the month of February and was carried out according to the plan of the vice-president and general manager. The first step was the appointment of a general fuel committee, of which the superintendent of motive power is chairman. The other members of this committee are the assistant general manager, general superintendent, chief engineer, engineer of maintenance of way, purchasing agent, general road foreman of engines, engineer of tests and the transportation inspector.

This committee handles the following matters: The coal supply, distribution of different grades with the view of getting the best possible results from each grade of coal, method of handling coal at chutes, the storage of coal, regulation of the coaling of locomotives to full capacity at certain points, and to light capacity at others, in order to save expense of hauling, and the settlement of questions submitted by division committees and others pertaining to fuel and its related subjects. The committee meets once a month, or oftener if necessary, at the call of the chairman.

Purchase of Fuel

In order to get the best results in handling the above questions, sub-committees were appointed from the members of the general committee to specialize on certain matters. To handle the purchase of fuel, the following sub-committee was appointed: The purchasing agent (chairman); the assistant general manager, the general superintendent, and the engineer of tests.

A certain proportion of our fuel supply comes from the Alabama fields. This supply has been obtained for a number of years from the same mines, and therefore the majority of the company's firemen are very familiar with this fuel.

This contract is renewed from year to year, but close inspection is made of this fuel from time to time, and visits are made to the mines and washers of the operators furnishing the fuel, by the engineer of tests. Samples of the fuel are sent to the company's laboratory and analysis made. In this manner we keep posted on the physical and chemical condition of our fuel.

It is necessary from time to time to purchase spot coal, sometimes in considerable quantities, due to a falling off of the regular supply. This is brought about from several causes, and very often necessitates going into new fields for a supply. This is handled by the engineer of tests. He visits the mines, investigates conditions and obtains samples. Report is made to the committee, who decide for or against the purchase, as the case might be. If the investigation indicates that the coal in question is worth considering, a car is ordered and the coal is tested on the locomotive under working conditions. By following this method we are assured of getting a good grade of coal. It is then the committeemen's duty to see that the quality is kept up to standard by the operators.

Distribution and Storage

The sub-committee on the distribution and storage of coal is as follows: The general superintendent (chairman); the purchasing agent, the chief engineer, the general road foreman of engines, and the engineer of tests.

This committee, as mentioned above, handles the distribution of fuel. It is impossible for the railroad to get all of its fuel supply from one mine, consequently we have the usual conditions resulting from the use of fuels from different districts. Some of the coals which we use will mix with any other, while some will not, and if these latter are mixed the usual troubles arising from this cause will follow. I refer particularly to the forming of clinkers in the firebox, which is always objectionable and very often serious, as it is the cause of low steam and delayed trains, besides the waste of fuel. Our committee, knowing these conditions, arrange the distribution of the different coals with the idea of reducing the mixing to a minimum. They also handle the storage of coal to the end that the proper coal will be stored in the proper place and in the proper manner.

There is a sub-committee on coaling stations, as follows: The chief engineer and engineer of maintenance of way.

This committee has supervision over the maintenance of coal chutes and coaling stations, the selection of new ones, and any change that might be made in order to facilitate the handling of fuel from a standpoint of efficiency and reduction of cost.

The sub-committee on coaling locomotives consists of the general road foreman of engines and the transportation inspector.

Division Fuel Committees

This committee supervises the coaling of locomotives, with the view of saving as much hauling as possible. In order to do this the fuel stations must be located as near the coal supply as possible. It certainly is just as easy for a locomotive to make a round trip over a certain division, starting from one end with its supply of fuel, as from the other. In this manner considerable expense is saved, which includes fuel burned in the unnecessary hauling of coal.

This covers all the duties of the general committee, as well

as the sub-committees. The next step in the formation of our fuel organization consisted in the appointing of committees on each division and also at certain terminals.

The division committee consists of: The superintendent (chairman); master mechanic, trainmaster, road foreman of engines, roadmasters, supervisor, chief dispatcher, two locomotive engineers, two locomotive firemen, one conductor and one yardmaster.

These division committees meet once a month on regularly scheduled days and handle the following subjects:

First—The holding of special fuel meetings at different points on the division with their employees, in the interest of fuel economy.

Second—Method of coaling locomotives at different chutes. Preventing the overloading of tanks, thereby saving fuel which would otherwise be lost off the tank during the movement of the locomotive about the terminal and on the road.

Third—The separation of different grades of fuel on chutes, where necessary to provide selected grades for passenger service. Also the separation of different grades at chutes which serve two or more divisions using different coals.

Fourth—The daily inspection of the quality of coal unloaded on the chutes.

Fifth—The periodical inspection of chutes to prevent waste of fuel which falls off locomotive tanks from overloading, and which in other ways gets on the ground.

Sixth—The handling of locomotives at terminals and engine houses to prevent them being fired up too far in advance of their leaving time; to prevent them from being held too long at cinder pits awaiting fires to be knocked, or being delayed in getting into the engine house. They also supervise the firing up of locomotives, not only with the view of saving fuel at this point, but to get the fires properly started and in good condition when the locomotive is turned over to its crew.

Seventh—The assignment of regular engines to regular engineers and firemen.

Eighth—The supervision at engine houses of repairs to locomotives, with the view of specializing on repairs to defects which make locomotives wasteful of fuel.

Ninth—Prevention of delays at engine houses and yards.

Tenth—The arrangement of schedules and meet orders so as to avoid excessive delays to freight trains at meeting points. To avoid where possible putting long and heavy freight trains in sidings on grades which are hard to start away from. In other words, it is the idea to give the long, heavy train the advantage at all times possible.

Eleventh—The reduction of slow orders, particularly on grades, and the prompt removal of flags when work is complete.

Twelfth—The flagging of trains by maintenance of way employees.

Thirteenth—The supervision of fuel at all stationary boilers, which includes shop boilers, pumping station boilers, heating plant boilers, etc.

Fourteenth—All other matters of interest, including the constant talking to and keeping the question of fuel economy before all engineers, firemen, trainmen, yardmen, engine-house men, and all others either directly or indirectly concerned with the handling of fuel.

All of the above subjects are of considerable importance, and each one has a direct bearing on the question of fuel economy; so in order to get the most efficient handling, sub-committees were appointed to handle each subject. These committees consist of from two to five members of the division committee, selected according to their experience with and their knowledge of the subject in question.

These sub-committees make their reports to the division committee, either as a special report or at the regular meeting of the committee, as the occasion may require.

At our most important terminals there are terminal committees which handle as many of the aforementioned matters as may apply to them. These committees are composed of the superintendent of terminals, master mechanic, general yardmaster, supervisor, coal chute foreman, one engineer and one fireman.

At some of the more important outlying points we have committees composed of the general foreman, two or more engineers, two or more conductors, two or more firemen and one yardman.

These committees work in conjunction with the division committee, and handle all matters pertaining to fuel economy.

Full reports of all committee meetings are made and copies are sent to each member of the general committee, as well as to the committees of other divisions.

In this way the general committee keeps in close touch with what is being done on all divisions. They can observe the interest that is being displayed by individuals and by committees. It is the policy of the general committee for one or more of its members to attend division meetings whenever possible.

The interest manifested by the various employees, whether committeemen or not, is wonderful. Every member of each committee started out with the avowed intention of doing his very best toward the movement.

Improvement was seen in a short while. The efforts of those directed towards the repairs to locomotives, particularly those which caused excessive waste of fuel, soon began to bear fruit, with the direct result that we have better satisfied engine crews. This improvement in the condition of their engines of course is an incentive to them to put forth their best efforts and get out of the locomotive the best possible results.

Concerted Efforts Bring Results

As a result of these efforts our fuel performance for the system for the months of February and March, 1921, was quite an improvement over that of February and March, 1920, as shown by the following figures:

	Passenger service, pounds of coal per pass. train car mile	Freight service, pounds of coal per 1,000 gross ton miles	Switching service, pounds of coal per locomotive mile
February, 1920.....	23	240.7	141.8
February, 1921.....	22	216.5	132.5
March, 1920.....	22.4	235.7	137.7
March, 1921.....	18.9	197.1	121.6

The actual saving in dollars, due to a better fuel performance in the three classes of service, was $15,073.03 for February and $39,172.89 for March, 1921. This shows conclusively what can be accomplished by the concerted efforts of every one concerned, whether it be the fireman who puts the fuel in the firebox, the engineer who is handling the engine, the men who take care of the train line, the men who attend to the front end, the flue blower and many others. Each one has a direct influence on the performance of the locomotive by doing his part of the work well, and thereby preventing failures on the road.

With the view of creating further interest in the work, it was decided to publish each month, as soon as possible after the data was all in, the individual performance of each locomotive. This was started with the month of March, and is to be continued. This will show some interesting facts from month to month, and our first statement has already brought about considerable rivalry in certain quarters. Some remarkable performances have been made by engine crews in their efforts to lower their fuel record.

Keeping the Men Interested

We have crews which have made two round trips between two terminals with our large Mountain type locomotives, handling passenger trains of from 6 to 10 cars a total distance of 412 miles on one tank of coal, or on less than 18

tons, for so far each one has gotten into his last terminal with a safe margin left.

Another splendid performance is the covering of 536 miles with a 19 in. by 26 in. 10-wheel locomotive, handling a three car train and consuming 11 tons of coal. Still another one may be mentioned, that of certain crews handling 8 and 9 car steel trains, with a 23 in. by 28 in. Pacific type locomotive, 382 miles on 11 and 12 tons of coal.

It is not necessary for a locomotive to have its fuel supply replenished every time it makes a short run. In the first place, imagine a tank holding 16 to 18 tons of coal; at the end of the first trip approximately four tons has been consumed. The locomotive is taken to the coaling station and enough coal put on to fill the empty space, and in the majority of cases the coal left on the tank is not touched. How long do you suppose this excess coal remains on the tank? If the coal was moved toward the gate and the fresh lot put on in the rear it would be quite different but the coal is not put forward as a general rule unless the locomotive is to turn without getting an additional supply.

The making of such performances as just mentioned shows what can be done when anyone puts his heart into his work. You cannot expect an engineer or fireman to have his heart in his work when he gets on his engine and finds it dirty and ill kept. What would any fireman say, one with any pride at all, if when he looks into the fire door he finds his fire in bad shape, dirty and clinkered; and the engine just from the engine house? Then when they start out they discover that the piston valve packing is blowing or that engine loses one or two exhausts when the lever is pulled up, driving boxes or main rods pounding and various other defects. Could you expect them to put forth their best efforts? All you can expect of them is that they will handle that locomotive over the road just as it has been handled in the engine house.

Saving Fuel in the Roundhouse

While the engineer and fireman are not the only ones who can waste or save fuel, the engine house is a very good place to start with; so, as mentioned before, we started specializing on those repairs which had to do directly with the efficient performance of the locomotive from a fuel standpoint.

It would surprise anyone who has had experience in these matters, to know just how much fuel can be saved by the proper supervision over the fire builders. How much fuel is wasted yearly by firing locomotives up too far in advance of their schedule leaving time? A modern locomotive will consume approximately 300 lb. of coal per hour standing under steam with all valves closed. This will vary, of course, with weather conditions and conditions of the locomotive. Don't let your fuel be wasted in this manner, as there is no excuse for it. Have men on the job that understand the building of fires. Don't let the locomotives reach the train with the fires dirty and improperly made. They can be properly prepared and it is the duty of those in charge of this part of the work to see that it is done.

I feel that too much emphasis cannot be placed on the foregoing, as I have always considered that the handling of locomotives at the terminals presented a splendid field for the fuel economist.

I cannot take up the space necessary to go into all the details concerning the many ways in which the locomotive is allowed to waste fuel, but I must mention some of them, such as dirty flues, choked grates, restricted air openings in the ash pan, air leaks in the front end, blowing piston and valve packing, and many others. Soot is a better insulator against heat than asbestos, so keep the flues clean and free from everything that prevents the transfer of the heat to the water in the boiler. Keep the air spaces in the grates open and see that each locomotive has air space in the ash pans, equivalent to at least 14 per cent of the grate area. Keep the front end tight, for you cannot maintain the vacuum in the front end unless you do, and if the vacuum is not maintained the locomotive cannot properly burn the fire, and we have the usual result—waste of fuel. When the pistons and valves are allowed to blow, steam is wasted and in addition the cylinders and steam chests cannot be properly lubricated.

Much has been said and a great deal written on the subject of fuel economy, but until it becomes a fixed principle we cannot expect to accomplish a great deal. The interest manifested in this work by the employees of the company is truly remarkable, and due to this interest our April performance, which has just been published, is a splendid achievement. The pounds of coal per thousand gross-ton miles per passenger car train mile and per switching locomotive mile, is the lowest in the history of the railroad, and as a result the company makes a saving in its fuel account of $36,967. Co-operation has brought this about.

The Interstate Commerce Commission

Left to right—J. B. Campbell, M. W. Potter, C. B. Aitchison, H. C. Hall, C. C. McChord, Chairman E. E. Clark, B. H. Meyer, W. M. Daniels, J. B. Eastman, J. J. Esch and E. I. Lewis.

Supplemental Tentative Valuations

STATEMENT SHOWING "FINAL VALUE"—INVESTMENT IN ROAD AND EQUIPMENT AND CAPITALIZATION AS STATED IN THE VALUATIONS BY THE INTERSTATE COMMERCE COMMISSION

Date of val. 6-30	Owned, used and not used: Miles of road	Owned, used and not used: Miles of all tracks	Carrier	"Final value": Wholly owned and used	"Final value": Owned but not used	"Final value": Used but not owned	"Final value": Total owned	"Final value": Total used	Investment in road and equipment (General balance sheet account 701 as of date of valuation): Carriers' books	Investment in road and equipment (General balance sheet account 701 as of date of valuation): Accounting section's restatement	Capitalization (General balance sheet accounts 751 to 753, 755 to 757, as of date of valuation: Stock (Common and preferred)	Capitalization (General balance sheet accounts 751 to 753, 755 to 757, as of date of valuation: Debt (Bonds, equipment trust and receivers' certificates)
1914	663	855	Atlanta, Birmingham & Atlantic R. R. System	$21,615,850	$4,932,400	.....	$26,548,250	$25,630,000	$64,877,195	.....	$39,500,000	*$25,016,176
1914	111	148	Texas Midland R. R	3,096,851	.....	.....	3,096,851	3,096,851	2,748,741	$2,892,361	112,000	2,000,000
1914	173	228	New Orleans, Texas & Mexico R. R. Co	7,493,161	1,101,000	$2,808	8,594,161	7,495,969	15,780,645	12,194,231	†2,000,000	†38,938,031
1914	875	1,308	Kansas City Southern Ry. System	36,026,389	13,389,708	.....	49,416,097	49,445,907	104,409,094	.....	52,902,700	51,880,530
1915	90	113	Winston-Salem Southbound Ry. Co	5,850,000	.....	.....	5,850,000	5,850,000	5,598.558	5,569,642	125,000	6,120,000
1914	227	923	Elgin, Joliet & Eastern Ry. System	19,389,385	19,650,430	.....	39,039,815	39,049,163	39,567,355	.....	19,100,000	19,000,000
1915	103	120	The Wrightsville & Tennille R. R. Co	1,595,669	.....	2,255	1,595,669	1,597,924	899,097	1,039,902	600,000	200,000
1915	6	8	Tooele Valley Ry. Co	228,489	42,000	1,005	270,489	229,494	346,225	.....	320,000	.....
1915	8	9	Alabama Central Ry	78,095	.....	.....	78,095	78,095	96.000	.....	96,000	.....
1915	8	9	St. John & Ophir R. R. Co	123,951	.....	.....	123,951	123,951	139,161	.....	140,000	.....
1914	54	70	Missouri Southern R. R. Co	919,964	.....	129	919,964	920,093	802,484	.....	414,700	246,191
1915	9	11	Ray & Gila Valley R. R. Co	627,593	136,897	.....	764,490	627,593	1,095,284	767,657	1,095,000	284
1915	5	6	Quincy Western Ry. Co	61,727	.....	1,486	61,727	63,213	79,817	.....	67,943	25,848
1915	174	184	Tonopah & Tidewater R. R. Co	2,657,998	.....	130	2,657,998	2,658,128	4,215,947	2,886,228	1,000,000	4,474,801
1915	12	13	Bowdon Ry. Co	83,620	.....	26,763	83,620	110,383	136,769	137,145	52,000	60,000
1915	392	497	Georgia Southern & Florida Ry. Co	9,851,992	294	8,199	9,852,286	9,860,191	12,273,374	10,377,066	3,768,000	6,575,265
1915	67	77	The Georgia Northern Ry. Co	877,868	.....	.....	877,868	877,868	912,145	.....	600,000	300,000
1915	20	23	Death Valley R. R. Co	357,546	.....	.....	357,546	357,546	365,962	346,870	95,000	278,000
1914	25	26	Dover & Southbound R. R	170,000	.....	.....	170,000	170,000	79,776	.....	.....	.....
1914	13	14	Carolina R. R. Co	163,280	.....	6,400	163,280	169,680	90,600	.....	35,000	48,794
1915	24	26	Hampton & Branchville R. R. & Lumber Co	198,124	.....	.....	198,124	198,124	138,275	140,275	100,000	.....
1915	22	24	Arizona Southern R. R. Co	332,288	.....	.....	332,288	322,288	843,589	.....	800,000	.....
1916	10	14	The New Mexico Midland Ry. Co	140,265	.....	.....	140,265	140,265	150,000	.....	150,000	.....
1915	15	16	Sylvania Central Ry. Co	.....	150,882	.....	150,882	.....	75,000	.....	75,000	.....
1914	989	1,263	San Pedro, Los Angeles & Salt Lake R. R. Co	45,832,318	.....	38,775	45,832,318	45,871,093	76,391,598	42,873,562	25,000,000	56,274,000
1915	10	11	Louisville & Wadley R. R. Co	145,421	.....	.....	145,421	145,421	106,053	80,353	79,400	.....
1915	....	2	Albany Passenger Terminal Co	138,901	.....	.....	138,901	138,901	104,184	103,753	15,000	103,000
1915	97	104	Macon & Birmingham Ry. Co	1,646,793	287	174	1,647,080	1,646,967	1,006,230	.....	500,000	508,481
1915	17	19	Mississippi Eastern Ry. Co	227,206	.....	23	227,206	227,229	173,476	188,797	75,700	.....
1914	902	1,094	Norfolk Southern R. R. System	21,883,575	2,786,300	.....	24,669,875	24,663,890	30,617,459	.....	17,867,100	17,788,643
1915	55	63	Tampa & Jacksonville Ry. Co	500,000	24	.....	500,024	500,000	1,160,394	663,529	604,900	550,937
1915	19	20	The Greene County R. R. Co	152,977	.....	.....	152,977	152,977	131,600	129,776	100,000	53,050
1915	18	20	Rome & Northern R. R. Co	265,925	.....	17,500	265,925	283,425	317,155	300,890	.....	242,570
1915	34	43	Carolina & Yadkin River Ry. Co	766,538	.....	.....	766,538	766,538	3,167,393	.....	1,840,000	1,256,600
1915	23	27	The Flint River & Northeastern R. R. Co	235,792	.....	963	235,792	236,755	235,925	.....	125,000	125,000
1914	20	23	Kinston-Carolina R. R. & Lumber Co	110,798	.....	50,043	110,798	160,841	36,067	39,831	35,000	11,000
1916	13	15	Central Ry. Co. of Arkansas	201,885	.....	39	201,885	201,924	251,062	206,340	260,000	.....
1914	7	7	Alabama Northern Ry. Co	88,000	.....	4,400	88,000	92,400	.....	.....	.....	.....
1915	89	96	Wadley Southern Ry. Co	895,091	135	.....	895,226	895,091	1,470,436	.....	600,000	872,435
1916	362	562	Chicago, Terre Haute & Southeastern Ry. Co	20,500,000	.....	2,223	20,500,000	20,502,223	24,927,762	.....	4,300,000	21,361,000
1915	93	108	Hawkinsville & Florida Southern Ry. Co	1,083,545	.....	86	1,083,545	1,083,631	703,529	535,529	100,000	623,425
1914	64	95	Mississippi River & Bonne Terre Ry. Co	3,551,550	.....	135	3,551,550	3,551,685	3,597,098	.....	3,000,000	2,778,900
1914	10	13	St. Francois County R. R. Co	190,190	.....	.....	190,190	190,190	374,517	.....	125,000	250,000
1916	21	23	The Cimarron & Northwestern Ry. Co	226,810	.....	.....	226,810	226,810	269,431	265,231	120,000	12,000
1914	1	6	Joplin Union Depot Co	586,708	.....	.....	586,708	586,708	553,527	540,958	40,000	650,000
1915	7	7	Talbotton R. R. Co	78,957	.....	.....	78,957	78,957	66,930	.....	32,500	30,000
1915	21	23	Northern Dakota Ry. Co	108,468	.....	.....	180,468	180,468	215,870	195,421	94,700	119,505
1915	111	126	Savannah & Northwestern Ry	1,814,271	.....	3,000	1,814,271	1,817,271	2,980,764	.....	1,000,000	2,148,363
1916	9	14	The Santa Fe, Raton & Eastern R. R. Co	201,227	.....	25,000	201,227	226,227	598,548	.....	300,000	321,202
1915	135	165	Evansville & Indianapolis R. R. Co	2,250,000	.....	291	2,250,000	2,250,291	4,327,585	.....	2,000,000	2,523,632
1914	53	58	Farmers Grain & Shipping Co	572,882	.....	170,000	572,822	742,822	650,335	563,193	200,000	438,000
1914	13	15	Brandon, Devils Lake & Southern Ry. Co	.....	170,000	.....	170,000	.....	184,586	.....	650,500	.....
1916	32	14	Fernwood & Gulf R. R. Co	576,632	.....	.....	576,632	576,632	605,855	.....	100,000	400,000
1914	105	113	Cape Girardeau Northern Ry. Co	1,257,716	.....	.....	1,257,716	1,257,716	1,792,549	1,230,249	110,000	2,132,500
1916	38	41	The Potomac, Fredericksburg & Piedmont R. R. Co	561,234	.....	.....	561,234	561,234	999,282	.....	446,600	390,000

Tentative Valuations

1917	6	7	Bristol Railroad Co	$108,600	.....	.....	$108,600	$108,600	$207,829	.....	$100,000	$100,000
1915	85	92	Bullfrog Goldfield Railroad Co	1,463,276	.....	.....	1,463,276	1,463,276	1,937,126	.....	1,640,000	250,000
1915	1,966	2,598	Central of Georgia Ry. Co. System	63,350,000	$13.519,691	.....	76,869,691	79,083,523	69,060,724	.....	26,649,900	37,295,350
1916	26	32	Chesapeake Beach Railway Co	765,000	.....	$88,750	765,000	853,750	2,567,232	$758,375	1,000,000	1,000,000
1916	11	13	Fellsmere R. R	110,000	.....	.....	110,000	110,000	163,520	143,522	.....	.....
1915	72	83	Gainesville Midland Ry	1,174,665	.....	.....	1,174,665	1,174,665	1,445,113	.....	550,000	973,011
1914	....	1	Goldsboro Union Station Co	145,000	.....	.....	145,000	145,000	101,006	.....	15,000	84,000
1916	41	44	Great Southern R. R. Co	764,401	.....	.....	764,401	764,401	710,417	600,760	100,000	590,000
1916	7	10	Hardwick & Woodbury R. R. Co	218,964	.....	18,942	218,964	237,906	160,263	99,534	150,000	.....
1916	5	6	Kennebec Central R. R. Co	70,700	.....	.....	70,700	70,700	81,268	.....	40,000	19,500
1916	6	9	The Monson R. R. Co	77,113	.....	.....	77,113	77,113	79,727	.....	70,000	70,000
1914	....	2	Norfolk Terminal Ry. Co	1,007,387	.....	.....	1,007,387	1,007,387	962,129	957,654	75,900	1,000,000
1915	9	10	Smoky Mountain Ry. Co	125,187	.....	18,607	125,187	143,794	90,037	91,770	50,000	50,000

											100,000	1,206,219
	1,880,300		600	405	1,880,900	1,880,705	1,295,005	.....	1,000,000	1,662,450

1915	12	St. Johns River Terminal Co.	1,880,300	600	405	1,880,900	1,880,705	1,295,005	.....	.....	100,000	1,206,219
1915	36	Spokane & British Columbia Ry. Co.	722,423	.....	.....	722,423	722,423	2,132,165	.....	.....	1,000,000	1,662,450
1915	41	Spokane International Ry. Co. System	4,860,121	400,000	.....	5,260,121	5,330,039	10,167,321	5,531,384	4,744,000	2,150,000	5,883,421
1917	191	Tonopah & Goldfield R. R. Co.	1,856,150	.....	.....	1,856,150	1,856,150	3,747,657	2,621,445	2,150,000	500,000	377,000
1915	113	The Washington, Potomac & Chesapeake Ry. Co.	216,656	40,000	.....	256,656	216,656	616,137	91,137	91,137	300,000	100,000
1915	97	Wiscasset, Waterville & Farmington Ry. Co.	500,168	.....	.....	500,168	500,168	308,956	.....	.....	300,000	.....
1915	22	Wood River Branch R. R. Co.	115,537	.....	.....	115,537	115,537	129,904	114,880	.....	60,000	56,500
1916	24	Woodstock Ry. Co.	489,213	.....	.....	489,213	489,213	282,510	.....	.....	250,000	.....
1916	44	Delaware & Northern R. R. Co.	1,417,210	.....	662	1,417,210	1,417,210	1,294,424	1,288,717	1,250,000	.....	.....
1917	47	Caddo & Choctaw R. R. Co.	237,499	.....	5,450	237,499	238,161	224,233	.....	.....	50,000	.....
1916	6	The Colorado-Kansas Ry. Co.	360,328	.....	.....	360,328	365,778	889,436	.....	.....	500,000	379,850
1916	15	Montana Western Ry. Co.	186,500	.....	.....	186,500	186,500	353,799	.....	.....	150,000	165,000
1916	52	Toledo, St. Louis & Western R. R. Co.	17,282,977	43,286	.....	17,282,977	17,326,263	39,381,687	289,150	19,947,600	304,000	28,464,814
1915	13	The Trinity & Brazos Valley Ry. Co.	9,064,056	510	.....	9,064,056	9,064,566	11,785,891	39,339,258	304,000	170,000	17,081,406
1916	23	Bridgton & Saco River R. R. Co.	360,563	.....	.....	360,563	360,563	296,853	11,476,726	11,476,726	102,250	170,000
1916	20	Gulf, Texas & Western Ry. Co.	1,667,771	.....	.....	1,667,771	1,667,771	1,917,788	295,493	295,493	500,000	2,001,961
1917	626	Fourche River Valley & Indian Territory Ry. Co.	250,000	7,460	.....	250,000	257,460	343,678	1,625,058	1,625,058	238,000	100,000
1916	450	Deering Southwestern Ry.	453,000	.....	.....	453,000	453,000	461,572	337,516	337,516	400,000	.....
1916	371	Delta Southern Ry. Co.	675,307	.....	39	675,307	675,346	973,486	458,923	458,923	50,000	1,713,587
1915	303	Intermountain Ry. Co.	991,127	.....	.....	991,127	991,127	956,308	918,203	918,203	400,000	522,500
1916	24	Lufkin, Hemphill & Gulf Ry. Co.	117,072	.....	.....	117,072	118,288	915,298	.....	.....	100,000	.....
1917	32	Milstead R. R. Co.	31,706	1,216	.....	31,706	31,924	.....	.....	.....	12,000	20,000
1916	12	Pacific & Idaho Northern Ry.	2,100,176	218	.....	2,100,176	2,100,176	35,144	.....	.....	.....	.....
1916	3	Riverside, Rialto & Pacific R. R. Co.	311,488	.....	.....	311,488	332,479	5,534,164	4,421,667	2,929,800	1,983,000	1,983,000
1916	90	Sumpter Valley Ry. Co.	1,829,745	.....	20,991	1,829,745	311,488	514,291	448,461	300,000	200,000	200,000
1916	10	Timpson & Henderson Ry. Co.	390,000	.....	.....	390,000	1,829,745	1,739,159	.....	.....	810,000	810,000
1916	13	Central R. R. of Oregon.	106,882	2,643	.....	106,882	392,643	307,080	.....	.....	250,000	27,935
1916	79	Chicago, Milwaukee & Gary Ry. Co.	2,889,475	7,568	.....	2,889,475	390,000	230,723	.....	.....	.....	225,337
1916	95	Grand Canyon Ry.	1,179,824	499	.....	1,179,824	106,882	114,450	.....	.....	5,500,000	7,677,188
1916	34	Lithonia & Arabia Mountain Ry. Co.	47,000	179,574	.....	47,000	2,889,974	11,269,746	.....	.....	1,406,300	642,863
1916	17	Minneapolis & Rainy River Ry. Co.	1,250,000	4,858	.....	1,250,000	1,179,824	1,359,398	1,998,785	1,998,785	60,000	.....
1916	130	Western Pacific Ry. Co.	66,061,208	.....	.....	66,075,947	51,858	.....	.....	.....	60,000	.....
1916	99	The Ann Arbor R. R. Co. System.	11,046,455	14,739	668,803	66,730,011	1,250,000	1,571,012	1,556,818	1,556,818	1,700,000	.....
1916	74	San Joaquin & Eastern R. R. Co.	1,148,000	80,785	.....	11,127,240	$156,318,136	$72,715,092	$75,000,000	$75,000,000	$97,720,913	
1916	6	White River R. R. Co.	392,223	.....	.....	1,148,000	11,127,277	17,341,338	7,300,000	7,300,000	8,223,304	
1916	3	Sunset Ry. Co.	1,361,298	.....	.....	392,223	1,148,000	1,197,157	1,196,939	1,000,000	1,438,760	
1916	63	Blancy & Southern Ry. Co.	56,000	106,928	.....	1,361,298	392,223	650,608	.....	.....	250,000	
1916	95	South Manchester R. R. Co.	171,188	.....	.....	56,000	1,468,226	1,691,854	1,686,191	1,000,000	250,000	
1915	1,118	Western Pacific Ry. Co.	.....	13,237	.....	171,188	1,361,298	112,878	.....	.....	606,000	
1916	939	The Ann Arbor R. R. Co. System.	.....	.....	.....	.....	56,000	93,576	.....	.....	75,000	
1914	295	San Joaquin & Eastern R. R. Co.	.....	.....	.....	.....	184,425	.....	.....	.....	40,000	
1915	422	White River R. R. Co.	.....	.....	.....	.....	.....	.....	.....	.....	.....	
1916	56	Sunset Ry. Co.	.....	.....	.....	.....	.....	.....	.....	.....	.....	
1917	19	Blancy & Southern Ry. Co.	.....	.....	.....	.....	.....	.....	.....	.....	.....	
1916	21	South Manchester R. R. Co.	.....	.....	.....	.....	.....	.....	.....	.....	.....	
1916	50		.....	.....	.....	.....	.....	.....	.....	.....	.....	
1916	77		.....	.....	.....	.....	.....	.....	.....	.....	.....	
1916	8		.....	.....	.....	.....	.....	.....	.....	.....	.....	
1916	7		.....	.....	.....	.....	.....	.....	.....	.....	.....	
1916	2		.....	.....	.....	.....	.....	.....	.....	.....	.....	
1916	3		.....	.....	.....	.....	.....	.....	.....	.....	.....	

*In addition to this amount, $4,994,000 receivers' certificates and notes have been issued, for which the A., B. & A., and the two terminal companies are jointly and severally liable.
†The capitalization of the New Orleans, Texas & Mexico R. R. Co. covers investments in affiliated companies not included in this valuation (Gulf Coast Lines), aggregating $22,174,230.
‡The investment and capitalization figures shown above for the Western Pacific Ry. Co., are those of the date of valuation. On December 31, 1917, the company was reorganized with an investment in road and equipment of $86,985,845 and a capitalization of $95,000,000.

I. C. C. Has Served Valuations on 106 Railroads

THE PRESIDENTS' CONFERENCE COMMITTEE on Federal Valuation of the Railroads has just issued a statement relative to the progress on valuation work up to the present time from which statement the following information and tabulated results have been taken.

Prior to April 5 of the present year the Interstate Commerce Commission had served 55 tentative valuations. As a consequence of the decision of the Supreme Court of the United States in the mandamus action brought by the Kansas City Southern against the Commission, (requiring the latter to report the present costs of condemnation and damages or of purchase of lands used for common carrier purposes in excess of the present value of such lands), it became necessary to prepare supplemental tentative valuations.

On April 5 the Interstate Commerce Commission served such supplemental tentative valuations covering the properties of the Atlanta, Birmingham & Atlantic, the Kansas City Southern System, the Winston-Salem Southbound and the San Pedro, Los Angeles & Salt Lake. At various dates since then supplemental tentative valuations have been served upon the other carriers which heretofore received tentative valuations. Within the last few days, in addition to the above, the Interstate Commerce Commission has served tentative valuations upon 51 other carriers.

These valuations are of significance to the carriers as they are the first submitted by the Commission in which any figure of value or "final value" as it is therein called, is reported, and the first containing any estimate of the present cost of condemnation and damages or of purchase in excess of original cost or present value of lands, as required by the second paragraph of the valuation act and the decision of the United States Supreme Court above mentioned.

The statement made by the Commission in these supplemental valuations as to its finding of "final value" generally is as follows:

"Final Value.—After careful consideration of all the facts submitted in this proceeding, and the cost valuations heretofore made, including the excess cost of the carrier lands, appreciation, depreciation, going-concern value, working capital and materials and supplies, and all other matters which appear to have a bearing upon the values here reported, the values, as that term is used in the Interstate Commerce Act, of the property of the above-named carriers owned and used, used but not owned, and owned but not used, devoted by the carrier to common-carrier purposes, are found to be as follows:"

The same statement is made in the new tentative valuations, excepting that the following clause is necessarily omitted:

"submitted in this proceeding, and the cost valuations heretofore made"

From an examination of the facts reported in the tentative valuations it would seem that in most instances the figure of final value reported is about the sum of the estimated cost of reproduction less depreciation, the present value of the carrier lands and working capital, including materials and supplies. In some instances where the original cost of carrier lands was in excess of the present value, as reported by the Commission on the acreage basis, the amount of the original cost of carrier lands seems to have been included in the finding of "final value" rather than the sum reported as the present value of the carrier lands. Apparently nothing has been specifically included for the excess cost of carrier lands, appreciation, and going concern value. The present value of the carrier lands which is reported is, generally speaking, merely the acreage or lot value of the adjacent lands applied to the area of the carriers' property. A tabulation has been

prepared and appears below showing the findings of the Commission in the valuation of each of these carriers.

Paragraph "First" of the Valuation Act requires, among other things, that "the Commission shall in like manner ascertain and report separately other values and elements of value, if any, of the property of such common carrier." The tentative valuations first served contained this statement: "No other values or elements of value were found to exist." Both the supplemental and the new tentative valuations make no reference whatever to "other values and elements of value," excepting in so far as these elements may be considered as included in the element of going-concern value, to which the Commission states it has given consideration.

Paragraph "First" of the Act also requires the Commission to report, among other things, "an analysis of the methods of valuation employed and of the reasons for any difference between any such values and each of the foregoing cost values."

Neither the supplemental tentative valuations nor the new tentative valuations contain any analysis of methods other than by reference to the so-called analyses which are contained in and made part of the decision of the Commission in the valuation of the Texas Midland and the supplemental tentative valuation of the Kansas City Southern.

To date 323 preliminary engineering, 247 land and 184 accounting reports have been tendered to the carriers for examination. They are classed as follows:

Class	I	II	III	Lessors	Term. Cos.	Electric Cos.	Tel. Cos.	Steamship Cos.	Not Classified
Engineering Reports (Prel.)	69	51	86	35	46	2	2	2	30
Land Reports (Prel.)	53	48	82	14	34	2	1	..	13
Accounting Reports (Prel.)	38	33	63	8	28	2	..	..	12
Eng. and Land Accounting Reports (Prel.)	37	30	48	8	22	2	..	..	10

New 60-Ton Electric Locomotive for Tidewater Southern

THE TIDEWATER SOUTHERN, a subsidiary of the Western Pacific, has recently placed in operation a 60-ton electric locomotive which embodies several interesting features. The present electrified section of the Tidewater Southern is arranged for 1200-volt operation that will be changed over to 1500 volts in the near future. The new locomotive was designed for operation at the higher voltage in view of the contemplated change in potential and will be used for handling the increased interurban freight traffic in the San Joaquin Valley between Stockton and Thurlock, California.

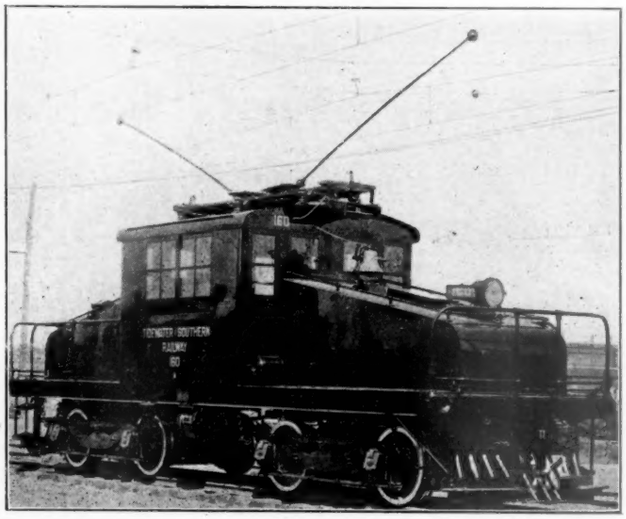
The locomotive is 37 ft. 4 in. long; 9 ft. 7 in. wide, with a total wheelbase of 25 ft. 5 in. All of its weight is carried on the driving axles. The cab has the sloping end steeple type of construction, extending practically the whole length of the underframe, which consists of four steel channels extending the entire length of the platform tied together by heavy rolled bars for the top and bottom member with cast the webs of the end frame castings and to the bolster plates on the bottom. The bolsters are built up of 1 in. steel plates, 10 in. in width, riveted to all four longitudinal sills.

The drawhead casings are bolted to the center sills, which are in turn riveted to the end frame. The draft gear consists of MCB couplers with 5 in. by 7 in. shank, standard twin springs and follower plates. The whole platform is floored, and the structural steel frame is stiffened by brace plates and a steel floor which extends the width and length of the locomotive.

The side frames of the two four-wheel trucks are built of heavy rolled bars for the top and bottom member with cast steel pedestals. The bolster or center transom is bolted rigidly to the side frames, and the entire weight of the truck, as well as that of the superstructure, is carried by semi-elliptic springs hung by links to the double side equalizer bars, which rest on the journal boxes. The journals are of standard design with MCB bearings and wedges. The wheels are of solid rolled steel, 36 in. in diameter, with MCB treads and flanges.

The locomotive is driven by four 750/1500-volt, box frame, forced ventilated railway motors through a single reduction gear of 69.17 ratio. The motors are arranged for shunted field operation, which gives a continuous rating on 1500 volts of 14,500 lb. continuous tractive effort at 22 miles an hour. It will operate at reduced speed on 600 volts. The type M single unit control is used with two master controllers giving ten steps with four motors in series and seven steps with two in series. The motors are permanently connected in groups of two in series.

The motor rheostats, and various parts of the control equipment, are housed under the sloping ends of the cab. Current is collected by two pole trolleys which will operate



Electric Freight Locomotive Designed to Operate from 1500-Volt Trolley

through a range of from 14 ft. to 22 ft. above the rail. There is a main switch with a magnetic blowout for opening the main circuit in emergency, or for inspection, and a number of auxiliary switches for the control of headlights, cablights, dynamotor blower set, compressor and compressor relay, control circuits, heaters, field shunting and control transfer. Headlights, as well as cablights, control and compressor relay, are operated from the dynamotor, except when the locomotive is being run on 600 volts, when they are operated from the trolley. There are two air compressors with a combined piston displacement of 70 cu. ft. per minute when delivering air at 100 lb. per sq. in. pressure. Air is used for sanders, bell ringer, and control, in addition to the air brakes.

ORDERS HAVE BEEN ISSUED by the Bureau of Valuation of the Interstate Commerce Commission closing the five district offices and consolidating all work in Washington. H. M. Jones, member of the Engineering Board, with headquarters at Chattanooga, has been appointed supervising engineer and T. P. Artaud, supervisor of land appraisals at Washington, has been appointed executive assistant. It is expected that staff positions in district offices will be abolished as the offices are closed.

I. C. C. Will Not Measure Efficiency of Railroad Labor

Elements Indeterminable and Carriers' Claims Indefinite—Long and Detailed Dissenting Opinions

DIFFERENCES in the cost of labor do not include changes in the quality or effectiveness of labor but only changes in wages, the Interstate Commerce Commission held in a decision handed down on August 6, prescribing the principles to be followed in fixing the maximum amount to be included in the carriers' accounts for operating expenses for maintenance during the guaranty period of six months following the termination of federal control on February 28 last year. Commissioners Daniels and Potter dissented from the opinion of the majority.

In fixing the allowance for maintenance the basis to be used by the commission will be the expenditure of the carriers for maintenance during an average six months of the test period (three years ended June 30, 1917) adjusted to differences in the cost of labor and materials and in the amount and use of the property. The same process will be used computing charges representing depreciations and retirements.

The proviso regarding the cost of labor, in the standard contract, is held not to "open the door to a comparison of the quality or efficiency of labor. To hold otherwise would be contrary to the plain intent of the proviso * * * for it is impossible by resort to the accounts of carriers to determine the relative efficiency of labor at various periods; and the introduction of this indefinite and intangible factor would have relegated the accounting test to the very limbo of controversy and conflict of opinion which it was designed to avoid. Moreover, what the carriers have in mind is really not the cost of labor but cost of accomplishment, an aggregate made up of the cost of labor multiplied by the quantity necessary for a given task. If it had been the intent to include the factor of quality or effectiveness, or efficiency, whatever it may be termed, this would have been done in apt and unmistakable language and not by the strained construction of a phrase susceptible of a simpler interpretation. This view is strongly confirmed by the history of the negotiations.

"A further significant fact is that the proviso permits the director general to fulfill his obligations in two ways—either by actual expenditure upon maintenance or by payment into funds for future use. If the latter method had been selected, obviously any comparison of efficiency of labor would have been out of the question, although a comparison of wages would have been wholly feasible * * *. The insistence of the director general that efficiency of labor should be eliminated from consideration sprang from the conviction that any attempt to weigh and appraise so indefinite a factor could only be productive of endless controversy. The soundness of this conviction and the inconclusive character of such attempts have been confirmed by the claims which the carriers have filed."

The decision is "by the commission" and is numbered 1176 in the Finance Docket. An abstract follows:

The Commission's Decision

By section 209 of the transportation act, 1920, carriers accepting its provisions were guaranteed relatively the same operating income for the "guaranty period" as had been paid by the government as compensation during the period of federal operation, and the Commission was charged with the duty of determining the amounts payable and was given certain directions governing the method of determination. The Commission was required so far as practicable to apply the rule set forth in paragraph *a* of section 5 of the "standard contract" between the United States and the carriers. This requires the railroad property to be returned in substantially as good repair and in substantially as complete equipment as it was when taken, and that due allowance be made for any difference that may exist between the cost of labor and materials as between the test period and the period of government control.

Following are the salient features of the decision:

The contention of the director general is that the law recognized the impossibility of determining by any physical comparison the amount of maintenance for which the government was liable and provided instead a simple mathematical or accounting method. The property taken over was so vast that any attempt to ascertain and compare by actual inspection its physical condition at the beginning and at the end of federal control was manifestly out of the question. The maintenance expenditures during the test period were the basic measure, but it was recognized that because of changes in wages and prices and in the amount and use of the property these expenditures would not serve the purpose fairly unless they were equated in accordance with such changes. So far as labor is concerned, the director general confines the equation to the change in wages, including the effect upon wages of reduction in hours of service, and he has already made settlements with a number of important carriers upon that basis. The carriers, however, contend that the equating process should allow, also, for changes in the quality or effectiveness of labor, or they will be unjustly deprived of very large sums of money; that labor was far less effective in the guaranty period than in the test period, because of changes in working rules and conditions and because, also, of a notable reduction of efficiency arising out of changes in personnel and other causes. The controversy centers over the meaning of the words "cost of labor." The director general contends that these words mean only the rates of pay per unit for the recognized varieties of railroad labor, while the carriers contend that the labor must be related to the accomplishment of a given result, and hence that the words include in their meaning quality as well as wages. The original draft of contract proposed by the carriers contained the language: "increases in the cost of material, increases in the price of labor, *decreases in the efficiency of labor,*" but the italicized words were eliminated at the instance of the director general. Similarly the carriers lay stress upon the substitution of the words "*cost* of labor" for "*price* of labor" and hold that this is inconsistent with any intent to make "cost" synonymous with "price," or rate of pay. It appears, however, that in one of their later drafts the carriers combined reference to "*cost* of labor" with a provision requiring consideration to be given to "differences in efficiency of labor," thus indicating that the change from "price" to "cost" was not deemed of controlling importance or to make unnecessary specific reference to the matter of efficiency.

We are clear that it was the purpose of the law to provide a simple and easily applied test which would make it possible to measure compliance with the covenant by resort to the accounts of the carriers and without the prolonged controversy which would follow any method involving physical inspection or opinion evidence. * * * The words "cost of labor" in paragraph *c* do not, we think, open the door to a comparison of the quality or efficiency of labor and we therefore find that differences in the "cost of labor," as these words are used in paragraph *c* do not include changes in the quality or effectiveness of labor, but only changes in wages.

All formulæ used in the railroads' claim are based upon the theory that changes in the ratio of maintenance expenditures for labor and for materials, so far as they are not accounted for by differences in prices and wages, necessarily reflect changes in the quality or effectiveness of labor. This theory presupposes a degree of similarity, in two given periods, between the kind of work and the conditions under which it is performed which no formula can establish and which the very nature of maintenance makes improbable. The incongruous results which such a formula will produce may easily be shown.

There are also factors affecting the quantity of maintenance labor which have no connection with its quality or efficiency. Such are efficiency or inefficiency of management, changes in standards or methods, weather conditions, the effectiveness of mechanical appliances which may be utilized, and the extent to which repairs

are made under contract in outside shops. The last-named has especial significance in connection with the operations of the guaranty period. * * * That inequity may result if changes in efficiency of labor are not taken into consideration, is far from clear. The government paid most liberal compensation for the use of the railroad properties for war purposes. If there was a decrease in labor efficiency, does it follow that the railroads and their owners were in equity entitled to complete immunity from the burdens which fell upon the country because of the war, or that results would have been in any degree more favorable for them during that period if their properties had remained in private hands?

When the roads were taken over much of their equipment was in poor condition, and * * * we are confronted by claims for undermaintenance during 32 months totaling in the neighborhood of a billion dollars. From this there might well be deduced a present physical condition of the railroads gravely perilous to both life and property. Yet in 1920 these railroads carried relatively more freight and passengers in the aggregate and more freight on the average in each car than at any time in their history.

In the interpretation of statutes the administration of which is committed to such special tribunals as the executive departments, the Supreme Court of the United States has followed the interpretations of the administrative bodies in cases of doubtful meaning, and has deemed a reenactment of any such statute with knowledge of the administrative interpretation, without corrective change, as a congressional sanction or adoption of that interpretation. * * * The transportation act, 1920, which prescribed the contract provision for our guidance, was in every way analogous to the reenactment of a statute with knowledge of an administrative interpretation of it, and these considerations may well influence us in the determination of the issues now before us.

The carriers contend that the obligation of the government was to return the property in as good condition as when taken over; that losses in physical life of property, represented by depreciation, should therefore have been paid for at current values; and that the obligation under the guaranty of section 209 in this respect is the same. But depreciation charges are computed at an annual percentage of the book value and retirement charges take up any remaining portion of this value not accounted for by depreciation or salvage. Upon any unit of property, therefore, these charges do not change as market prices rise or fall; but since new property is taken into the accounts at cost when acquired, the aggregate expenditures for depreciation and retirements are to this extent affected by changes in current price levels. It may be assumed that the bulk of the equipment in use during the guaranty period was bought prior to the test period and was still in use at the close of the guaranty period. Its replacement cost is yet unknown. This is equally true of other property, and it is not proper in determining amounts payable under the guaranty to take into consideration differences in cost of labor and materials which would not have affected the accounts if guaranty-period conditions had been substituted for those of the test period, and neither depreciation nor retirement accounts will be adjusted for such differences.

The guaranty of section 209 was accepted by 667 carriers, and to date they have been paid on account amounts totaling well over $400,000,000. A balance still to be paid is in controversy, and this report deals with the two major questions which have been in dispute and which were argued before the full Commission last December. Minor questions are appropriately left to be determined as they arise in specific cases. Upon one of these major questions, that which has to do with depreciation and retirements, we are all in agreement. As to the other, there are differences of opinion. It is needless to say that this report is not based upon a distinction between offensive and inoffensive inefficiency. One dissenter goes so far as to state that the carriers make no claim for allowances based on inefficiency. The fact is that the records are filled with their statements as to the alleged expense caused by "inefficiency of labor," with nothing whatever to indicate an intent to limit the expression to any particular species. The carriers claim that various factors, apart from changes in wages or prices, have increased the cost of maintenance work, but they do not undertake a segregation so that we may know what portion is ascribed to any one factor; they ask for a lump sum based upon a formula, revised from time to time, assumed to cover all elements of increased cost whatever they may be. The carriers' adherence to formula has been largely guided by results, and they have yet to accept any without reservations. * * *

Stress is laid upon changes in working conditions. During the guaranty period the Pennsylvania Railroad contracted for the repair of certain locomotives at the Baldwin Locomotive Works. It is significant that in our investigation of this matter the carrier's own witness testified that the cost of repairing a locomotive at the railroad's shops as compared with the cost in the Baldwin shops might be fairly put at a ratio of $9,453 to $22,434. This notwithstanding the changes in working conditions. The effect of the "national agreements" is a highly controversial matter, and as yet but one side has been presented to the Senate investigating committee. If, however, any of these changes in working conditions in effect caused an increase in wages and the amount of the increase can be shown by satisfactory evidence, there is nothing in this report which would preclude an allowance accordingly.

Commissioner Daniels Dissents

It is agreed that the scales of wages and the prices of materials increased to such an extent that the money expenditures for a given amount of maintenance were substantially greater in the guaranty period than in the test period; not only were the wages per hour or per day increased, but in certain cases the hours of labor per day were reduced, new rates and rules for overtime were established, new working conditions were imposed, and extensive changes in the personnel of shop and other forces incident to the war were experienced. A complete interpretation requires consideration also of differences between the amount of property maintained, and of any difference in use between that of the test period and during the guaranty period which is substantial enough to be considered.

The contentions of the carriers are that they are entitled to be allowed whatever amount was required to accomplish the same amount of physical maintenance that was done during an average six months of the test period; but it has been urged by the director general that if, say, the laying of 100 tons of rail should require 125 hours' work, while in the test period the same amount of work was done in 100 hours, he should pay for only 100 hours in the guaranty period, notwithstanding the fact that the expenditure of such amount during the guaranty period would have resulted in replacing a smaller amount of rail and would have failed to accomplish "the same relative amount, character, and durability of physical reparation." One of the curious inconsistencies of this contention seems to be that while it concedes full allowance for whatever changes in the cost of outside labor may be reflected in the higher cost of material, it refuses similarly to allow for the corresponding cost of labor to the carrier in putting the same amount of material in place.

The President in his message to Congress had defined the term "maintenance" as "a guaranty" from the government to the carriers that "their properties will be maintained throughout the period of federal control in as good repair and as complete equipment as at present." It was thus made the duty of the director general, in making contracts with the several carriers, to provide for the maintenance of their properties by the government in such condition as would assure to them the return of their properties, as the President and Congress both declared, "in substantially as good repair and in substantially as complete equipment as it was in at the beginning of federal control." The majority report discusses this matter, but its conclusion is drawn from exceptional cases, where carriers in the test period had undermaintained their properties, and hence overstated their net income. In cases where the director general afforded only the same relative amount of maintenance as the too scant expenditure made by the carrier itself in the test period, it is true that the property at the end of federal control might be in worse condition than at the beginning of such control. But this elevates an exceptional condition into the rule, unless we have ground to believe that American railways generally were undermaintained during the test period. There is nothing whatever to justify the conclusion that it was the purpose or intent of the director general to depart from his instructions or to disregard the act of Congress. There is nothing in the law which would compel us to say that the director general has entered into a contract which does not provide generally for the maintenance of the property in such condition as to assure its return to its owners in substantially as good repair and in substantially as complete equipment as it was at the beginning of federal control.

The majority report says that if the director general had made payment into funds for future use, comparison of efficiency of labor would have been out of the question. I believe that this contention, while plausible, will not stand analysis. The alternative method—of paying money into funds—was to provide for the effectuation of what direct outlay on maintenance would otherwise have secured. Can it be seriously argued that if the dollar currently paid in wage during federal control would have provided more maintenance in actual physical work the director general would have had to pay into funds an amount of money more than sufficient to pay for the maintenance done during the test period? If he would not, how can the conclusion be avoided that he was required, if he elected the alternative method, to pay into funds sufficient to provide for the same amount of work as would have been necessary if the work had been done and paid for outright? While the director general would not agree to the insertion in the contract of the suggested provision as to "inefficiency of labor," neither would the carriers accept the term "price of labor." The contract as finally written rejected both and used the term "cost of labor," and this term we are called upon to construe in the light of its use in the contract, the instructions of the President to the director general, and the requirements of the statute.

It is to be noted that the negotiations respecting the form of the contract were not dealings in the ordinary and usual sense between the parties to the contract. The contract was submitted as standard and was submitted to the individual carrier for its acceptance or rejection. Some carriers refused to sign and others took what was offered in preference to a lawsuit. The rule which we are directed to observe is to be applied "whether or not such contract has been entered into with the carrier whose railway operating income is being computed." The contract is therefore to be interpreted solely in the light of the law which provided for it.

In the face of the duty of the director general as an agent to carry out the instructions of his principal and of his duty to comply with the act of Congress, it is impossible for us to conclude that it was the mere expenditure of money without regard to the result on the maintenance of the property which was in his contemplation or in the contemplation of any of the parties. * * * A comparison of costs of labor without having a unit of labor to deal with is impossible. The units must be comparable units and measurable. A calculation involving only a comparison of the cost of a man's labor at one time with the cost of a woman's labor or a boy's labor at another time would not be a comparison of the cost of labor required to do a particular piece of work. The comparison of the cost of labor necessarily involves dealing with the cost per unit of work done. The purpose in mind was to do as much in the way of maintenance in one period as had been done during another, for presumably the same amount of maintenance would produce the same result in physical reparation. There was no other way to carry the spirit of the act, the proclamation of the President, and even the standard contract into effect. We can not hold that, as used in the contract, cost of labor is synonymous with the price of labor. * * *

The test of the interpretation of the words "cost of labor" is, therefore, to be found in the inquiry as to what changes would have been effected in the accounts showing the expenditures and charges for maintenance during the test period, by substituting for the labor conditions of the test period the labor conditions of the period of federal control or the guaranty period. The adjustments can not be limited to the rate of wages per day or per hour of labor, but must include adjustment for every element of cost of physical reparation or material replacement or restoration, or of what has been referred to as "the labor cost of material in place." The carriers must be required to produce the adequate proof, but on production thereof, they are entitled to its benefit. A greater allowance than this would be unjust to the United States; a less allowance than this would be unjust to the carriers.

Discussion Should Have Been Confined to Specific Cases

Commissioner Potter, dissenting, reviewed the case of the Baltimore & Ohio and cited at length a study of the subject by Colonel W. A. Colston, director of the Commission's division of finance.* Mr. Potter said in part:

It is the direct command of Congress that due allowance shall be made for *any* difference in the cost of labor and materials. I dissent from the majority report. I concur in that part of the dissenting report by Commissioner Daniels wherein he demonstrates conclusively that the carriers are entitled to "the same relative amount, character, and durability of physical reparation," which can only mean the cost of material in place. The majority report admits that we are charged with the duty of determining the amounts payable by the United States under the guaranty referred to and that we were given certain specific directions governing the method of determination. It neither determines nor tells how to determine allowances for differences in costs of labor and materials, allowances for differences in amounts of property maintained, or allowances for differences in use of property. It deals with a bugbear of inefficiency of labor which is only a man of straw. When the phrase "inefficiency of labor" is used in the offensive sense of slacking or dereliction of labor, implying a falling short of labor in its duty, it means one thing. My contention and I think the contention of the others in the minority is that when not used in the offensive sense, allowance should be made to the carriers for expenditures made under changed terms and conditions. The majority report is not clear as to whether it is intended to deny allowance to the carriers for such portions of their actual expenditures as resulted from such changed terms and conditions. It is chiefly upon the theory that the majority report would refuse to allow expenditures made necessary by such changed terms and conditions or that it fails to pass upon the question that I dissent. As the subject under consideration has been brought before us, we are not called upon to pass upon any claim of the carriers based on the alleged inefficiency of labor, where such phrase is used in the offensive sense referred to. It is obvious that there is much doubt as to whether such a claim would be susceptible of adequate proof. The distinction between the different meanings of the phrase "inefficiency of labor" was drawn to our attention on December 4, 1920 by our director of finance [Colonel Colston]. His statement, modified to show comparisons of cost per effective hour of labor, is shown in an appendix [not reproduced here]. I have pointed out to my associates voting with the majority that the inefficiency of labor which is made the very gist of their discussion is not in any sense, and certainly not in the offensive sense in which used by them, in issue in this case. I have been unable to secure the correction of the report in this regard and am therefore put to the necessity of showing the real issues by a review at some length of the history of the case. * * * In compliance with instructions, our director of finance proposed as a basis for our determination of the general principles for the fixing of maintenance charges a report in the case of the Baltimore & Ohio, which involved all of the principles as to which a determination was required, and which was based upon the plan tentatively agreed upon between our bureau of finance and the carriers. I think it is very unfortunate that we did not follow the course thus outlined and render our decision in a concrete case, rather than adopt the practice of making an announcement in the abstract. * * *

The familiar principle announced in the *Hermanos Case* cited in the majority report is not applicable to an interpretation of the standard contract. The necessity for the "long continued" construction of a statute which the majority opinion treats lightly is the very essence of the decision referred to. Not only is "long continued construction" lacking in this case but as a matter of fact there has never been any general acquiescence. The present controversy is due to the fact that the other parties interested do not accept the director general's construction and the general principle involved has never been settled by any administrative body. The principle that the director general, a contracting party, would be permitted to interpret or construe his own contract would be an anomaly in the law.

[Commissioner Potter here went into a detailed examination of those features of the national agreements which enhanced the cost of railroad operation, contending that all these should be considered by the Commission.]

Dissenting Opinion by Commissioner Campbell

Campbell, Commissioner, dissenting, said in part:

The interpretation placed by the majority upon the phrase "cost of labor" is, in my judgment, contrary to the plain and natural significance of these words. If the words of an instrument are plain and unambiguous, as in this case, resort may not be had to extraneous facts in order to ascertain the intent of the parties thereto. A comparison of costs of labor without having a unit of labor to deal with is impossible. The unit must be measurable and the result obtained is the standard by which a unit is to be measured. In other words, the carriers are entitled to be paid for maintenance in place.

Commissioner Hall did not participate in the disposition of this case.

From the Quebec Chronicle.

The Universal Scapegoat

*This was printed in the *Railway Age* of June 17 last, page 1403.

Canadian Railway Results in Calendar Year 1920

Operating Ratio Was 97 Per Cent—Total Earnings Increased, but Net Declined Chiefly Owing to High Labor Costs

By J. L. Payne
Formerly Comptroller of Statistics, Department of Railways and Canals

"ONE OF THE MOST unfavorable years in their history" is the mild but significant statement with which the Dominion Bureau of Statistics commences its preliminary report of operating results on Canadian railways for the calendar year 1920. An analysis of the details which follow would justify the choice of a stronger adjective; for 1920 was really a frightfully disastrous year for the railways of Canada. If it were not for the fact that government is back of lines representing more than 52 per cent of the total operating mileage, another such year might very well mean the stoppage of transportation by rail over a large part of the country. The facts warrant such a gloomy forecast.

Fragmentary information in relation to the Canadian National group, as announced to Parliament several months ago, had prepared the public mind for the full data now given out. In the meantime, the Canadian Pacific report had been issued, and it was avidly accepted as a countervail to the exceedingly discouraging deficit which the Minister of Railways had been compelled to reveal to the country.

Thus the worst and the best were known in advance of the full figures which have now been published. The worst relates to the government system, and yet the Canadian people do not appear to feel any particular sense of uneasiness about the matter. They know that business will go on as usual. Back of that, they also know that the continued operation of the state roads means continued losses, which must fall upon the Dominion treasury; but they have a complacent and quite impersonal way of looking at that aspect of the situation. If taxpayers had not that disposition, the whole business of administration would be immediately and drastically reorganized the world over. As Otto H. Kahn declared recently in his brochure on "Pressing Problems and Some Suggestions," the article that has risen in cost higher than any other has been government. Yet people do not seem to care.

The burden of growing taxes raises no outcry; but a small advance in the freight tales makes everybody vociferous in denunciation. We live in a world full of contrarieties.

Operating Ratio 97 Per Cent

The ratio of operating expenses to gross earnings in 1920 was 97.17 per cent. Within that pregnant statement of fact lies the whole story of trouble. All other figures are merely collateral and explanatory. For 1919 the ratio was 92.2, which must be compared with an average of 71.0 during the period between 1900 and 1917. In some of those eighteen years the railways had experienced hard times. That was notably true of 1914 and 1915, and the cause was not altogether the disorganization which followed the outbreak of war. The shrinkage of traffic had begun very positively before Germany invaded Belgium, and it is reasonable to assume that an indefinite period of stringency had set in when the war came along to create a feverish and unnatural revival of trade. Trade and traffic are synonymous. That revival, however, was accompanied by such wild advances in the cost of labor and materials, and such a violent expansion in resultant operating expenses, that, despite higher rates and swelling receipts, the railways have finally been brought to the verge of absolute bankruptcy.

We shall be able in a moment to identify quite clearly an outstanding cause for this distressing spectacle of insolvency, notwithstanding that it was accompanied by unprecedented buoyancy in railway earning power. Before doing so, it is well worth while to pause long enough to recognize the important change which has taken place in the attitude of the public mind—for there is such a thing as a public mind—toward railway interests.

It would have been futile three years ago to tell the people at large that the railways were in trouble. Not a trace of sympathy would have been aroused. There might even have been satisfaction. The railways were "corporations" and stood for "big business," separate and aloof. They were harried by vexatious legislation and many other demonstrations of hostility.

Today, for the first time, the situation of the railways is understood, and to the extent that such understanding rests on a clear appreciation of the vital relationship which must always exist between commerce and transportation it represents unreckonable compensation for adversity. It may have needed just such unparalleled tribulation to open the eyes of the people and awaken their conscience.

Largest Gross—Smallest Net

The railway cataclysm of 1920 was co-incident, as has been said, with the largest volume of gross earnings on record. Large, however, as were receipts, the flow of expenditures reached proportions beyond all preceding standards. The total of gross revenues was $491,938,857, as against $408,598,361 for 1919. Operating cost, on the other hand, rose from $376,789,093 to $478,002,823. Thus, while inflow was increasing by 20.4 per cent, outgo increased by 26.7 per cent.

This happened in a year when the trend should have been in the opposite direction if safety was to be assured. A net operating revenue of $13,936,002, after $9,553,990 for taxes and $59,102,979 for interest on funded debt had been paid, left a corporate loss for the year of $43,088,388. There was a decrease of $17,873,265 in net operating revenue, and an increase in corporate loss of $28,159,722. Grave as is this showing, it does not include many millions of fixed charges attaching to the older units of the government system. The bookkeeping of the government in respect of capital account has already been explained in these columns, and it must suffice to say that it excludes everything but the primary outlay for actual construction.

Here again one is impelled to moralize. If the large volume of gross earnings just indicated had come to the railways of Canada under normal conditions as to outgo, what a vital help to them it would have been! The popular notion has hitherto been that transportation agencies wanted big earnings for the sole purpose of paying fat dividends, some of them on diluted capitalization. That they desired to be in a position to reward in a reasonable measure investors in their securities may be admitted without the slightest hesitation. Such a motive was proper and sound from every angle of view. The watered stocks were myths conjured largely by prejudice. But that was far from being their chief purpose. To sane and ambitious railway executives abundant income is associated with reserves for additions and betterments, so that borrowing may be unnecessary.

It is singular that when a bank accumulates a huge re-

serve it is credited with commendable shrewdness and prescience, while if a railway does precisely the same thing it is accused of greed and dishonesty. The aim is the same in both cases, and the means to the end are identical. In the final reckoning, moreover, it is just as important that the transportation agencies of the country should be strong as that the banks should be strong. In the awakening which has now occurred, bringing with it a dispassionate judgment mingled with sympathy, this fundamental truth may be recognized. If it is, it will mean much to the hard pressed railways. The pinch from which they are suffering so acutely will not have been wholly unavailing if that is one of the results.

Swollen earnings grew out of larger traffic and higher rates. During 1920 the railways of the Dominion hauled 127,388,453 tons of freight, which was within a few thousand tons of the record mark of 1918. For the year there was a gain of 15,900,673 tons. Ton-miles had an aggregate of 31,893,182,716, which was the highest ever registered, and showed that business was really good. The number of passengers carried was 51,306,074—also a new high score. Passenger miles, however, did not gain in proportion, solely because the average journey was shortened. That was one of the phenomena of the situation in the United States last year. More people used the trains; but they did not travel as far as they had done in other years. Gains were also made in revenues from mail, express and incidentals. In short, there was activity in all departments, and 1920 would have brought unprecedented prosperity to the railways of Canada, with qualifications as to the government system, if it had not been for the high and quite extraordinary cost of operation. That cost absorbed not only all but 2.83 cents of every dollar which was received during the year, but ate up nearly every trace of profit and left the roads in the weakest state they have ever been in during the seventy odd years of their history.

Of the 56 railways reporting, 31 paid operating expenses and 25 had a deficit. Of the 31 which made one hand wash the other, so far as operating revenues and operating cost were concerned, 19 showed a net corporate income of $36,581,437. The Canadian Pacific accounted for that credit balance almost wholly. It is an exceedingly strong road, and enjoys unique advantages as to profitable results from outside operations. It paid its usual dividend on common stock, but could scarcely have done so if it had been confined to net railway earnings. To do what it did in 1920 involved exceptional economies, including sweeping reductions in staff and in train mileage. All the railways appear to have cut down on maintenance, which is always a sign of distress, and they only do it when they have to.

High Expenses Due Mainly to High Labor Costs

Why were operating expenses so high and so destructive in 1920? The Dominion Bureau of Statistics gives the answer in these words: "Over 56 per cent of the increase in operating expenses was in salaries and wages, which increased about 25 per cent, or from $233,323,074 to $290,431,221, and about 14 per cent was in the cost of fuel." In all that has thus far been brought to public notice with respect to the railway payroll for last year, only the facts relating to the Canadian National and the Canadian Pacific have been available. It is now possible to sum up the situation for the Dominion as a whole, and when that has been done the full story of what were the consequences of the McAdoo and Chicago awards are brought out graphically. There cannot be any escape from the conclusion, no matter how the figures are set down—so long as they are fairly stated—that the railways were impoverished by the scale of wages they were compelled to pay to their employees. Let the official statistics tell their own tale, as is shown in the following table:

	Number of employees	Total remuneration
1913	178,652	$115,749,825
1915	124,142	90,215,727
1917	146,175	129,626,187
1918	143,493	152,274,953
1919	173,728	233,323,074
1920	184,934	290,431,221

If these totals of compensation be reduced to averages per employee the result is as follows:

	Average per employee
1913	$648.09
1915	727.54
1917	887.85
1918	1,064.86
1919	1,343.25
1920	1,570.75

There is something at once significantly suggestive in the fact that, while the volume of salaries and wages increased by 25 per cent in 1920 over 1919, the average per employee gained by but a little over 17 per cent. The explanation is found in the need for more men to do the same amount of work. Although the national agreements did not extend to Canada, there was nevertheless on this side of the line the same lowered efficiency which had been so conspicuous in all industries as the result of the labor situation during the latter stages of the war period. As between 1918 and 1920 the average wage grew by 47.5 per cent, and as compared with 1917 by 76.9 per cent. Going back to the year prior to the outbreak of war, the 1920 average showed an advance of 142.4 per cent.

The rise in the volume of compensation to employees is even more striking than the average. As compared with 1919 the difference in 1920 was 25 per cent. Over the total for 1918 it was 90.8 per cent, and over 1913 it was 152.1 per cent. It may be conceded that 1915 was an abnormal year, and for that reason might be excluded; but it stands in the official record, and shows that the aggregate of compensation to employees in 1920 was 222.2 per cent higher. In fact, it was this swiftly rising total of outgo under the head of salaries and wages which carried operating cost to the point where it seriously threatened to crush the railways beneath its weight. It has all but done that.

This year the expenditure for labor will be lower than it was in 1920. The 12 per cent cut has just gone into effect, after repeated conferences with representatives of the unions and considerable show of resistance. Some of the minor organizations have not yet agreed to the lower scale. They are protesting that it is not justified by the cost of living, and is going to cause great hardship among large groups of workers; but their acquiescence is not of controlling importance after the Big Four have taken the reduction. This much may be said with assurance: Public judgment is absolutely and unqualifiedly on the side of the railways. The attitude of the press makes that abundantly clear. Therefore, while there will be much of complaining and calling for arbitration, it is not probable there will be anything in the nature of a strike. It is somewhat surprising that, while the McAdoo and Chicago awards went into effect in Canada automatically, the jurisdiction of the National Railway Labor Board is now called in question by railway employees on this side of the boundary, and they want the whole matter opened up.

The grounds on which these minor unions are holding out are two in chief: First, that economic conditions do not justify them; and second, that the National Railway Labor Board is without jurisdiction in Canada. The first contention is supported by arguments which merely mean "we need the money," and may therefore be dismissed as unimportant. The second suggests quite sharply the inconsistency and insincerity of these men. They accepted the McAdoo award of 1918, and the Chicago award of 1920, without any compunction or the uttering of a syllable on the score of jurisdiction. The Canadian railways might very well have raised that question; but they did not. They accepted the awards

and their consequences. To appeal now for arbitration, which would involve a repetition of the proceedings at Chicago earlier in the year, would make for an indefinite delay. That is probably the sole purpose in view. In the meantime, there is nothing to show that this action is supported, either morally or otherwise, by the major brotherhoods.

The official figures raise the loss on the government system in 1920 to $71,909,927, as against the estimate by the Minister of Railways of a little under $70,000,000 in March last. Since the corporate deficit on 37 roads—which had no share in the net income of $36,581,437 enjoyed by the 19 roads referred to in a preceding paragraph—was $79,669,825, it follows that the shortage on lines outside of the government group was $7,759,898. But the fact must not be overlooked that a very large volume of fixed liability is not charged against the Canadian National, and if the account as to capital were made up on a sound basis the loss for the year would not fall below $140,000,000. That is to say, there are quite unavoidable and legitimate charges, amounting to about $70,000,000, which are omitted from the government statement.

In the light of details which the full report for 1920 affords, the causes of this large deficit on the government system are brought out with unmistakable definiteness. It will not be necessary to go into the matter in this sketch, since a careful analysis was presented in the *Railway Age* of July 16. The more complete data now available serve to accentuate the weak spots which were then exposed. For example, the average trainload of the Canadian Northern, which is the most important in the amalgamation and enjoys favorable grades, was but 354 tons, as compared with 528 for the Canadian Pacific. Going still deeper into the results of management, and considering per passenger mile and ton-mile service combined it cost the Canadian Northern 1.057 cents for labor alone, as against .674 to the Canadian Pacific, or a difference of 56.8 per cent adverse to the state road.

Measured in another way, the total of passenger and ton-miles per employee on the Canadian Northern was 153,019, as against 222,459 on the Canadian Pacific. If operating efficiency be gaged on that basis, then it is completely obvious that the corporate road showed a betterment of 45.4 per cent.

Freight Car Loading

THE LOADINGS of revenue freight for the week ending July 30 totaled 796,570 cars—an increase of 6,222 cars over the week ended July 23, according to the reports of the Car Service Division of the American Railway Association. Loadings of revenue freight during the corresponding week of 1920 totaled 936,366 cars and for the corresponding week of 1919—925,195 cars.

The week showed gains in the loadings of all commodities except coal and ore. Loading of grain and grain products is heavier this year than during either 1920 or 1919. For the week ended July 30, 66,416 cars were loaded, or 26,564 more than were loaded during the corresponding week in 1920 and 9,301 more than the similar period of 1919. Compared by districts, increases over the week before in the number of cars loaded with revenue freight were reported in the Eastern, Southern, Central western and Southwestern regions but decreases in the Allegheny, Pocahontas and Northwestern. All reported decreases compared with the corresponding week last year except the Central western.

The surplus of cars in serviceable condition continues to decline, due principally to the increased demand for grain cars in the Central West. The Car Service Division's new figure, "cars temporarily out of service due to business depression" (which figure includes all surplus serviceable cars as well as bad order cars in excess of 7 per cent of the total) shows a decrease of 28,991 cars from the total of 555,168 on July 23 to 526,177 on July 31.

Of the total of 555,168 on July 31—321,781 were serviceable freight cars, while the remaining 204,396 were cars awaiting repairs. On July 23 the surplus of serviceable cars was 350,772. Surplus box cars in good repair at the end of the month numbered 100,207 compared with 119,442 on July 23, or a reduction within that period of 19,235 cars. Reports showed 161,723 surplus coal cars in serviceable condition, which was a reduction of 6,845 cars in a little more than a week.

As a result, mainly, of the demand for grain cars, a shortage in certain sections of the country of 3,905 freight cars was reported by the railroads. This was an increase of 1,137 cars over that on July 23. Of the total, 3,710 consisted of box cars, an increase of 1,207 cars in a week.

REVENUE FREIGHT LOADED AND RECEIVED FROM CONNECTIONS

Summary—All Districts: Comparison of Totals This Year, Last Year,, Two Years Ago. For Week Ended Saturday, July 23, 1921.

Districts	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Mdse. L.C.L.	Miscellaneous	Total revenue freight loaded: This Year 1921	Corresponding Year 1920	Corresponding Year 1919	Received from connections: This Year 1921	Corresponding Year 1920	Corresponding Year 1919
Eastern	1921	10,216	2,517	41,233	806	4,318	2,961	56,081	71,574	189,706	.....	.....	187,799	.....	.....
	1920	5,607	2,479	56,620	3,280	8,353	9,614	35,783	106,425	.....	228,161	230,406	.....	265,047	228,291
Allegheny	1921	4,576	2,860	45,821	2,067	2,334	7,153	42,073	50,624	157,508	.....	.....	104,711	.....	.....
	1920	2,476	3,084	60,423	5,983	3,224	11,092	36,035	66,812	.....	189,129	189,139	.....	135,655	138,274
Pocahontas	1921	274	163	20,149	19	1,272	20	2,575	5,221	29,693	.....	.....	12,188	.....	.....
	1920	172	124	22,548	712	1,659	203	68	9,153	.....	34,639	36,593	.....	21,435	18,307
Southern	1921	5,062	2,036	20,215	251	13,256	229	34,685	33,866	109,600	.....	.....	62,915	.....	.....
	1920	3,291	2,140	22,744	1,330	15,635	3,099	34,474	43,622	.....	126,335	113,255	.....	75,989	69,995
Northwestern	1921	11,774	6,827	6,424	468	11,388	22,044	27,748	34,405	121,078	.....	.....	42,417	.....	.....
	1920	8,332	7,227	11,325	1,213	15,682	47,671	31,005	40,936	.....	163,391	157,397	.....	61,503	60,917
Central Western	1921	23,455	8,066	14,082	136	4,723	539	29,957	38,009	118,967	.....	.....	50,019	.....	.....
	1920	11,055	8,568	21,697	462	5,995	4,979	32,431	41,095	.....	126,282	120,238	.....	67,765	63,452
Southwestern	1921	9,562	2,220	4,218	181	5,835	709	15,197	25,874	63,796	.....	.....	43,877	.....	.....
	1920	4,544	2,488	6,233	147	7,567	656	16,413	22,433	.....	60,481	62,654	.....	45,825	49,072
Total, all roads	1921	64,919	24,689	152,142	3,928	43,126	33,655	208,316	259,573	790,348	.....	.....	503,926	.....	.....
	1920	35,477	26,110	201,590	13,127	58,115	77,314	186,209	330,476	.....	928,418	.....	.....	673,219	.....
	1919	51,545	29,392	183,783	8,371	58,807	71,524	122,321	368,651	.....	.....	*909,682	.....	.....	628,308
Increase Compared	1920	29,442	.....	.....	.....	.....	.....	22,107	.....	.....	.....	.....	.....	.....	.....
Decrease Compared	1920	.....	1,421	49,448	9,199	14,989	43,659	.....	70,903	138,070	.....	.....	169,293	.....	.....
Increase Compared	1919	13,374	.....	.....	.....	.....	.....	85,995	.....	.....	.....	.....	.....	.....	.....
Decrease Compared	1919	.....	4,703	31,641	4,443	15,681	37,869	.....	109,078	119,334	.....	.....	124,382	.....	.....

*Detail for Michigan Central not shown in 1919.

L. C. L. Merchandise loading figures for 1921 and 1920 are not comparable, as some roads are not able to separate their L. C. L. freight and miscellaneous of 1920. Add merchandise and miscellaneous columns to get a fair comparison.

July 16	1921	56,991	24,802	152,116	3,737	44,037	31,484	208,079	255,006	776,252	942,851	902,296	484,300	681,684	627,841
July 9	1921	38,015	21,067	126,331	3,830	34,356	26,312	180,658	209,129	639,698	796,191	809,845	434,929	633,997	554,129
July 2	1921	40,547	24,923	157,265	4,354	47,542	30,335	215,887	253,955	774,808	891,621	743,226	511,035	651,932	584,596
June 25	1921	38,821	28,229	156,999	4,557	49,427	28,921	215,678	252,429	775,061	911,503	845,684	516,603	664,420	591,200

Piece Work Dispute Again Before Labor Board

Employees' Reply to Carriers' Testimony in National Agreements Case—Hearings to Last Five Days

THE ABROGATION OF RULES, the terms of which prohibit piece work in railroad shops, is again under discussion before the Railroad Labor Board. On August 8 hearings on this subject were begun as a result of the disagreements which have been reached between approximately 70 carriers and representatives of their shop employees. In practically all of the negotiations which have been conducted during the past month between individual carriers and their own employees, the employees have stood firmly for the retention of Rule 1 of the Shop Crafts National Agreement providing for the payment of employees on an hourly basis. This rule prohibits the payment of shop employees on a piece work basis. Because of this universal disagreement, the Board ordered the present hearings. Again, when B. M. Jewell, president of the Railway Employees Department of the American Federation of Labor, finished presentation of his case in the controversy over national agreements, he stated that his testimony was complete except for the submission of data on the subject of piece work. Mr. Jewell was promised at that time an opportunity to complete his case, and these hearings, according to the opening announcement of Vice-Chairman W. E. Hooper, were called in compliance with the request of the employees for opportunity to answer the voluminous testimony on the uneconomical effects of the abolition of piece work presented by the Conference Committee of Managers in the hearings on national agreements.

At the opening session on August 8 Mr. Walber raised the question as to whether the present hearings are a continuation of the hearings on national agreements or whether they are to be considered as separate hearings on disputes filed with the Board as a result of the negotiations between individual carriers and their own employees ordered by the Board in Decision No. 119. Mr. Walber stated that it was the feeling of the carriers that the real question before the Board is whether it is right to deprive officers of the railroads of the right to conduct their systems under a plan which is more economical and more efficient than the plan whereby employees are paid by the hour.

A large portion of the first day's testimony was taken up with a plea by Mr. Jewell for separate hearings on each disagreement certified to the Board during the past few weeks. He contended that the Board should hear testimony from representatives of each carrier and from the representatives of the employees on each road. In stating his position Mr. Jewell outlined the program of the shop men's organization on national agreements, and in this connection maintained that the only instructions issued to local representatives of his organization were that they negotiate an agreement acceptable to them and to the employees whom they represent on each railroad.

In closing the first day's testimony Mr. Walber stated that the carriers intended to rest their case largely on the testimony presented by the Conference Committee of Managers. He formally submitted this testimony in the present case.

On August 9 the Labor Board announced that five days of five hours each would be allowed for the hearings in this case. The first four days are to be devoted to the employees' reply to the piece work testimony of the Conference Committee of Managers and the last day is to be devoted to rebuttal statements by representatives of the carriers. Vice-Chairman Hooper in making the announcement stated that the only question before the Board at this time is whether or not the rule prohibiting piece work should or should not be continued. After considerable discussion as to the procedure which should be followed the hearing was adjourned until August 10 at Mr. Jewell's request.

Committeemen representing the shop employees on 28 eastern and 26 western carriers involved in the disputes over piece work appeared before the Board on August 10 and vigorously protested the re-establishment of piece work. Practically all of the local committeemen stated that from 95 to 100 per cent of the shop employees represented by them have voted against the re-establishment of piece work on the grounds that this system of pay works a hardship on the employees, constitutes a form of slavery, prevents the payment of punitive overtime and makes impossible the payment of a living wage. Many of the committeemen based their arguments largely on the fact that the re-establishment of piece work would wipe out their punitive overtime to a great extent and the introduction of this argument was protested by Mr. Walber, who called attention to the fact that the present hearings are on the question of piece work. Mr. Jewell replied that the two subjects are so closely allied that they must be considered together. This point was not made an issue and the hearings continued.

Board Renders Another Decision in Pennsylvania Dispute

A decision in the controversy between the Pennsylvania and the Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees over the election of representatives to negotiate new agreements regarding rules and working conditions was announced by the Board late last week. This dispute is to a large extent similar to the dispute between the Pennsylvania and its shop men, described in the *Railway Age* of July 16 (page 115).

The Labor Board in its decision held that:

1. The carrier was within its rights in denying that the Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees represented a majority of that class of employees, and requiring evidence of the alleged fact.

2. An election to be freely participated in by all employees of that class, union and non-union, to select representatives to negotiate rules and working conditions was proper and legal.

3. That the carrier was wrong in refusing to allow the name of any organization to go on the ballot. There is nothing in the Transportation Act to justify this course. Said statute recognizes the existence of organizations of railway employees, and the right of the men to belong to such organizations is no longer seriously questioned in any quarter. The railway employees have built up organizations with their money, have put at the head of them the men they consider most competent and trustworthy, and have acquired a vast amount of information, statistical and general, bearing on matters affecting their rules and working conditions. It is unjust and unreasonable to seek by methods, direct or indirect, to deprive them of the efficient representation afforded by these organizations, provided, of course, a majority of them desire to be so represented. On the other hand, if the carrier, by fair and legal methods, can win the support of a majority of its employees to non-union representation in this important statutory conference, it has the undoubted right to do so. Putting the name of an organization on the ballot was equivalent to putting the names of individuals there, because it simply meant that the chosen officers of the organization would represent the employees, if the majority vote authorized.

4. Said organization of employees was wrong in its suggestion that the ballot contain only the names of organizations to the exclusion of individuals. This ignored the rights

of non-union men, and was therefore unjust and unreasonable.

5. The insistence of the carrier that no name should go on the ballot save that of an employee of the carrier is not justified by the statute. The employees had no desire, however, so far as the record shows, to place on the ballot the name of any one not an employee.

6. The carrier had no legal right to adopt a regional division for the purpose of requiring the employees to elect regional representatives. The Transportation Act contemplates that the class of employees directly interested on the entire system shall select their representatives, and even if it did not, the carrier would have no right to make such arrangement without the consent of the other contracting party. Such a power to subdivide into districts could easily degenerate into the process known in politics as gerrymandering.

The carrier had no right to segregate for the purpose of such election, the clerks in the general offices at Philadelphia and Pittsburgh, as the character of their work and the conditions under which it is performed are not so dissimilar from that of the other clerks as to constitute them a distinct class of employees. This action was in disregard of Decision No. 153 of this Board, which is here cited for further direction on this particular matter. For the same reason the carrier did not have the right to otherwise subdivide the clerks for the purpose of said ballot. The groups into which they were divided did not constitute distinct classes of employees.

7. The carrier was correct in its contention that the employees embraced in the membership of the Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees constitute more than one distinct class of employees within the meaning of the Transportation Act.

The Labor Board holds that, under the Transportation Act, one distinct class of employees cannot negotiate rules for another distinct class. For example, the laborers employed in and around stations, storehouses and warehouses have no right to participate in the election of representatives to negotiate rules for clerks, and vice versa the clerks have no right to participate in the election of representatives to negotiate rules for said laborers.

The fact that these different and distinct classes of employees belong to the same organization does not affect the question under consideration. The organization may admit to its membership as many different classes of employees as it may see fit, but it cannot throw their combined vote and strength to the election of representatives to negotiate, under the Transportation Act, for any one distinct class of employees. The organization may be selected, however, to represent any class of employees that belong to it.

The Labor Board has heretofore held that employees performing work similar in its general characteristics and in the conditions surrounding it belong to the same class, within the meaning of the statute. It now holds the converse of this proposition—namely, that employees performing work dissimilar in its general characteristics and in the conditions surrounding it must be assigned to different classes, within the meaning of the statute.

It is not always easy, however, to classify employees, for there are varying degrees of similarity and dissimilarity in their work and working conditions.

The Board then divided the employees represented by the clerks' organization into three groups: clerks, foremen and storekeepers and office, station, warehouse, storehouse and elevator forces not included in the first two groups.

Continuing, the decision said:

8. When the dispute arose as to the essential preliminary of how the representatives of the employees should be selected, neither party should have proceeded further, until that disagreement was composed either by further conference or by reference to the Labor Board.

The Transportation Act places the carrier and the employees in a contractural relationship as to the negotiation of rules and working conditions, and neither of the parties has the right, either directly or indirectly, to dominate or dictate the other party's selection of its representatives.

The statute expressly says that the employees directly interested shall "designate and authorize" their representatives.

Inasmuch as the law requires the carrier to deal with the representatives of the employees, it necessarily follows that the carrier must know who the duly authorized representatives are. It is therefore proper for the carrier to be kept in close contact with the election and to be represented in the conduct thereof.

In this connection it may be added that all regular labor organizations and the unorganized employees of the carrier should be fairly represented in every step incident to the taking of such a ballot.

The misunderstanding which arose as to the proper method to adopt, for the selection of the representatives of the employees for the conference on rules deprived great numbers of employees, apparently a majority, of their legal right to be represented. This sort of a situation is not conducive to industrial peace. The carrier ought not to be content with it, because it is unjust and un-American.

It cannot be said that this case involves in any sense the question of the open or closed shop. Neither does it involve any attempt to deprive the carrier and the employees of the right to sit down at a conference table and settle their own differences, if any arise, as to rules and working conditions. On the contrary, it is the purpose of this Board by its decision to guarantee both to the carrier and its employees, union and non-union, every right conferred upon them by the law, to the end that there may be the harmonious co-operation essential to the well-being of all parties and the highest service to the public at large.

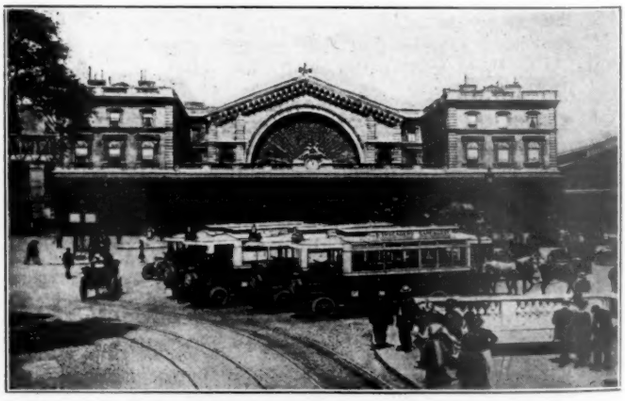
The election conducted by the Pennsylvania was declared "illegal and void," the rules negotiated by the representatives elected by the company ballot to be "void and of no effect," and another election to determine the choice of a majority of each of the three classes of employees as to their representatives in the negotiation of new rules and working conditions was ordered in the decision. The Board also called a conference on or before August 15 at which the representatives of the carrier, of the Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees, of any other similar organization and of each group of one hundred or more unorganized employees who desire separate representation to formulate plans for the new election.

Board Orders Secret Ballot on Pennsylvania

In an addendum to the Pennsylvania decision announced in the *Railway Age* last week the Labor Board on August 5 ordered a secret ballot to determine representatives to negotiate new agreements regarding rules and working conditions. The decision of the Board in this case directed that each employee voting should show on his ballot his name, craft, place of employment and whether working or furloughed and should then seal and forward the ballot to the proper committee. The attention of the Board was called to the fact that this method of balloting in this instance would be objectionable because there is such conflict of interest. The addendum is the result.

Pennsylvania Allowed More Time to Comply

The Pennsylvania Railroad has asked for and been granted 15 days' grace (to August 25) on the order of the Railroad Labor Board requiring the company to confer with representatives of "System Federation No. 90" concerning plans for an election to select members of the committee to deal with the company in the revision of the rules of employment of its shopmen.



Eastern Railway Station at Paris

Senate Committee Begins Hearing on Funding Bill

Some Senators Opposed to Final Action Before Recess— Finance Corporation Director Defends Measure

HEARINGS began before the Senate Committee on Interstate Commerce on August 9, on the Townsend bill which would enable the War Finance Corporation to purchase obligations of the carriers for the amounts due by them for capital expenditures made by the government during the period of federal control, and to use the proceeds of the sale thereof to advance funds to the carriers for the amounts due them. A similar bill has been introduced in the House by Representative Winslow, as was noted in the *Railway Age* of last week.

Testifying before the committee, Eugene Meyer, Jr., Director of the War Finance Corporation, said that passage of the bill would mean the employment of an additional 1,000,000 men during the coming winter. The bill contemplates only the revival of the powers given the War Finance Corporation during the war, he said. The Corporation would have no direct dealings with the railroads under its provisions. It would simply be enabled to buy such securities as it deemed advisable. No appropriation for this purpose would be necessary or desirable, he added. Purchases of railroad securities by the War Finance Corporation would, in his opinion, have a stimulating effect upon many lines of business.

Senator Townsend asked whether an emergency existed that necessitated passage of the bill. Mr. Meyer thought an emergency did exist, that an emergency existed whenever a million men were out of employment. He was then asked if he were firmly convinced that the bill would restore confidence in railroad securities.

"I have no doubt of it," he replied. "Conditions are working in that direction right now, and I think we can materially accelerate the restoration of confidence. By retoring confidence in the railroads, confidence will be restored in all other lines, and this bill will mark the beginning of the real reconstruction period."

Alba B. Johnson's Letter to the Committee

Immediate passage of the railroad legislation is essential, the committee was told in a letter written by Alba B. Johnson, president of the Railway Business Association. He asked that no amendments modifying the transportation act be considered by the committee as a part of the pending bill, because of the delay that such amendments would entail.

"Rather than contribute even a half hour to the delay, the Railway Business Association refrains from offering testimony," Mr. Johnson wrote. He called attention to reports that the bill might either be delayed until after a recess or defeated through irrelevant amendments which the majority of the two houses would find unacceptable. Mr. Johnson's letter follows:

Reports persist that the passage of S. 2337 (the Townsend Bill) may either be delayed until after a recess or defeated through irrelevant amendments which Congress would not accept. Hundreds of thousands of men look for work to members of our association, manufacturers of railway equipment, material and supplies. Unemployment among them reaches great proportions. These men, their families and the communities in which they live and trade are waiting for full force or full time. They must wait until the railroads can obtain money with which to pay supply bills and to place new orders.

S. 2337 would give the roads time in which to repay sums advanced by the government during federal control for capital purposes and release for immediate cash remittance balances due the roads from the government on other accounts.

WASHINGTON, D. C.

Rather than contribute even a half hour to the delay the Railway Business Association refrains from offering testimony at your hearing appointed for August 9 and requests instead that this letter be inserted in the record.

We urge:

1. Prompt Action. A voluntary vacation for Congress without this enactment would mean an involuntary vacation without pay for hundreds of thousands of industrial employees.

2. Separate Action. We hope you will exclude serious consideration of amendments not essential to clarify the primary purpose of the bill. Congress has no mandate of ascertained public purpose to modify any essential principle of the Transportation Act of 1920. If discussion of general amendments is desired it can be conducted most advantageously on its merits free from confusion with the discharge of a plain governmental obligation, so recognized by the President of the United States, the Secretary of the Treasury, and the Director General of Railroads. If it shall be proposed that Congress at this time abandon its established policy in order to make railway rates by statute instead of through an administrative tribunal created by it, such a reversal of federal method and practice requires in safety to the public a discussion so thorough that postponement of industrial resumption through the debate is unthinkable.

Opposition to the Bill

The bill was opposed at Wednesday's hearing before the Senate Interstate Commerce Committee by Senator LaFollette and by several Democratic Senators, among whom was Senator Pomerene, of Ohio, who referred to the proposed funding program as a "hand-out." The bill was defended vigorously by Eugene Meyer, director of the War Finance Corporation, who declared that it was a measure for national as well as railroad rehabilitation.

In answer to the questions of Senator LaFollette as to where the bill had originated, Mr. Meyer said he had discussed the question with the President and that the bill had been drawn thereafter by G. C. Henderson, counsel for the War Finance Corporation. Mr. Meyer said he had not attended any conference at which President Harding discussed the legislation with railroad executives and that no one outside the War Finance Corporation had a hand in drafting the bill.

"Did you know that Mr. Hoover was going to New York to confer with railway executives about it?" persisted Senator LaFollette. Mr. Meyer disclaimed such knowledge.

Senator La Follette referred to loans by the War Finance Corporation to the Brooklyn Rapid Transit Company and a New Orleans street railway company, which, he said, soon afterwards became bankrupt. The Senator said he did that to indicate "how business was transacted." Director Meyer said he regarded the Brooklyn Rapid Transit loan as "eventually good," and said the New Orleans loan had been paid in full.

Senator LaFollette sought to show that the bill really would authorize the War Finance Corporation to fund, or sell, over one billion dollars of railroad securities rather than only $500,000,000. Mr. Meyer declared that funding of the latter amount only was contemplated or could be reasonably accomplished.

Director General Davis Testifies

The limit of funding under the bill, Director Davis of the Railroad Administration told the committee would be $500,000,000 and "probably under." Giving a detailed statement of the railroad debts to the government for additions and betterments—mostly equipment—furnished carriers during the war, Mr. Davis said a total of $1,144,000,000 had been advanced for that purpose. Of this,

he said, the railroads had given $310,000,000 in equipment trust notes and $70,000,000 paid in cash, leaving a balance of $763,000,000, of which $61,000,000 already had been funded privately. About $700,000,000 of the government advances, therefore, he said, have not been funded, but for various reasons, lack of securities, etc., Mr. Davis stated that the bill would require funding of less than $500,000,000.

No change is proposed by the bill, Mr. Davis added, in the authority given him under the transportation act to settle all claims against the government. Mr. Davis said the bill would be "greatly beneficial." "Its whole purpose," he said, "is to let the public, instead of the government, carry these loans." Examination of Mr. Davis was continued Thursday.

Illinois Manufacturers Urge Favorable Action

Chairman Cummins on Wednesday received a letter from Charles A. Livingston, representing the Illinois Manufacturers Association, urging prompt enactment of the bill "in order that the railroads, industries and all shippers may immediately be relieved that transportation troubles may be averted and unemployment be lessened."

Not all of the railroad securities held by the government will be accepted and marketed by the War Finance Corporation, Director Meyer said during his opening testimony on Wednesday. Only the good securities now held by Director Davis of the Railroad Administration will be funded, Mr. Meyer said, explaining that the provisions of the funding bill were permissive and not mandatory upon the War Finance Corporation. The securities which are deemed good by the corporation, Mr. Meyer stated, would have to be marketed gradually.

"Of course, we can't throw hundreds of millions of securities on the market," he said. "We would take them over temporarily and market them later, furnishing funds to enable the director general to adjust accounts with the railroads." Senator Kellogg, of Minnesota, interjected that there was nothing in the funding bill relating to settlement of claims between the railroads and the government. "It simply takes the railroad securities now held by the government and transfers them to another branch of the government to be sold," said Senator Kellogg.

Director Meyer added that in advancing funds to the director general on the railroad securities taken by the corporation the director general then would have funds to proceed with adjustments of accounts.

About $700,000,000 of the railroads' equipment notes given for loans by the government during the war are held, Mr. Meyer said. "These are frozen credits, and we propose to unfreeze them for the benefit of the government," he said.

Postponement of Action Possible

President Harding had expressed the desire that the funding bill should be passed before the recess of Congress which has been set tentatively for August 20, but he was told by the Republican leaders that this would be practically impossible. Tremendous pressure is being brought upon the Executive and upon Congress for quick action on the bill, but there is considerable opposition to it in both Houses. The leaders fear that to attempt to jam it through before the recess would provoke a filibuster that would prevent passage of other essential legislation.

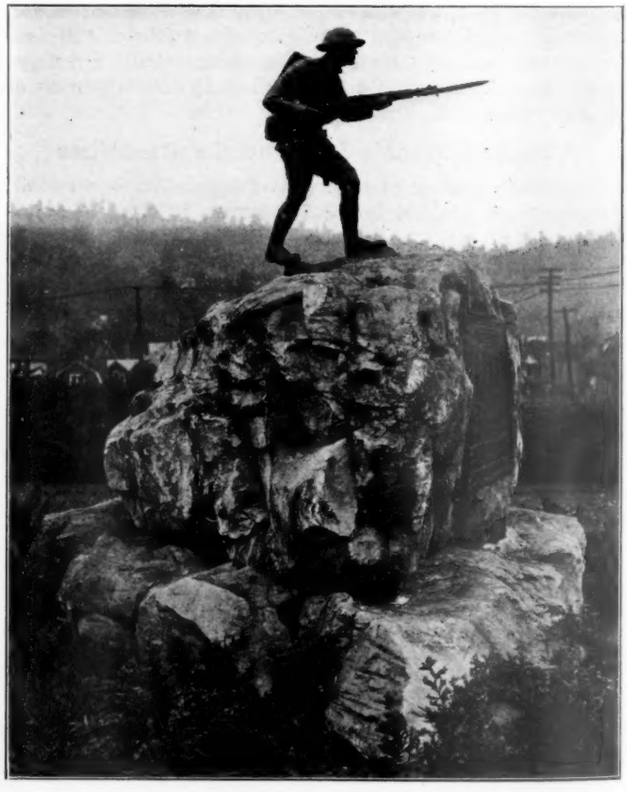
The Winslow Bill Referred to Committee

The banking and currency committee of the House voted on Monday to authorize its chairman, in his discretion, to move in the House for rereference of the Winslow railroad funding bill to the banking and currency committee. This bill, like the agricultural relief bill, is in the form of an amendment to the War Finance Corporation act, and is identical with the Townsend bill, the hearings upon which began before the Senate Interstate Commerce Committee on Tuesday. Chairman McFadden said he had not decided whether an attempt to get jurisdiction of the bill, which at present is in the hands of the interstate and foreign commerce committee, should be made. He said there would be no effort to combine the agricultural relief bill and the Winslow bill, should the latter be referred to this committee by the House.

The I. C. C.'s Decision As To Maintenance Allowances in Guaranty Period

Elsewhere in this issue there appears an abstract of a decision by the Interstate Commerce Commission denying the claims of the railroads to include in their allowances for maintenance during the guaranty period, charges to cover the inefficiency of labor. Following this decision, Secretary Mellon of the Treasury Department said that in accepting payment from the government covering the guaranty period the railroads will be expected to relinquish all right to appeal to the courts in the further attempt to secure payment of these claims. Acceptance of final settlements by the railroads reserving the right to receive further payments in the event that the courts uphold their claims for compensation for inefficiency of labor will not be possible under Secretary Mellon's decision. The carriers would either be compelled to sign a waiver relinquishing their rights of appeal to the courts or else have final payments agreed upon held up pending action by the courts on the disputed claims.

The same point of view as expressed by Secretary Mellon regarding payments for the guaranty period is held by Senator Lenroot regarding payments for the period of federal control. He has announced that he would propose an amendment to the Townsend bill now in committee providing that none of the benefits of the bill should extend to roads refusing to relinquish all claims against the government growing out of inefficiency of labor under federal control. The proposal advanced by the senator was endorsed by several of his associates.



Monument Erected by Employees of the Tyrone Division of the Pennsylvania in Memory of Their Fallen Comrades

General News Department

G. C. Williams has been appointed assistant superintendent of steamers of the Southern Pacific, with headquarters at San Francisco, Cal., effective August 3, succeeding F. A. Fish, retired.

The **Illinois Manufacturers' Association,** through its president, George R. Meyercord and Secretary John M. Glenn, has appealed to President Harding by letter to hasten the financial settlement with the railroads in order to enable the carriers to carry out their repairs of rolling stock. It is pointed out that unless repairs are made a car shortage will result.

The Southern Railway announces the shortening of the time of eight through passenger trains, to be put into effect on August 14. No. 38, the northbound New York & New Orleans Limited, will arrive at New York 40 minutes earlier than at present and No. 25 and 26, the Memphis Special, will be run through in about two hours, 20 minutes less time than at present. Several other trains will be quickened an average of about one hour each.

A 20 per cent wage reduction applying to all employees of the National Railways of Mexico earning 100 pesos or more a month went into effect on August 1. Following the refusal of the railway directorate to rescind this order for a wage cut, the organized employees issued an ultimatum threatening a general strike if the former scale of compensation was not continued.

The strike of the 302 members of the federated shop crafts on the Cincinnati, Indianapolis & Western, noted in the *Railway Age* of July 30 (page 196), which started on July 22, because the railroad would not pay the men time and one-half for overtime, has been called off, and about half of the men have returned to work. They will be received by the company, however, as new men, having lost their seniority rights by their walk-out. B. A. Worthington, president of the road, states that the new men who were taken on to fill the positions of the strikers will not be discharged to give room for the returning men.

Congressional Discussions of Tax Problems

The Ways & Means Committee of the House on Wednesday agreed to recommend the repeal of the transportation taxes on freight, passengers, seats and berths, beginning with January 1, 1922. The taxes on express shipments and on pipe lines were retained in the draft of the proposed revenue law. The losses resulting to the Federal Treasury from the proposed changes are estimated as follows: Repeal of freight taxes, $145,000,000; of passenger taxes, $100,000,000 and of Pullman taxes, $8,000,000; total, $253,000,000. In revising the transportation taxes the Committee did not follow the program suggested at the conference on Tuesday between President Harding, Secretary Mellon, the Republican members of the ways and means committee and Representatives Mondell, Madden and Campbell. At that conference the proposal was that the transportation taxes should be reduced 50 per cent next January and the balance on January 1, 1923.

Committee to Administer Valuation Order No. 3

A committee has been created to consider questions arising under the administration of order No. 3 of the Division of Valuation of the Interstate Commerce Commission. This committee consists of two representatives of the Bureau of Valuation, one of the Bureau of Accounts, and three of the carriers. The following have been named as members of this committee. Morris A. Zook, resident engineer, Bureau of Valuation, Washington, D. C.; William L. Fulton, senior civil engineer, Bureau of Valuation, Washington, D. C.; W. H. Swinney, assistant to director of accounts, Bureau of Accounts, Washington, D. C.; H. L. Ripley, corporate and valuation engineer, New York, New Haven & Hartford, Boston, Mass.; E. M. Thomas, comptroller, Chesapeake & Ohio, Richmond, Va.; and A. A. Ferguson, mechanical valuation engineer, Missouri Pacific, St. Louis.

Australians to Investigate American Stores Department Methods

Five prominent Australian railway men have arrived at San Francisco, Cal., to make a study of American railroad methods of handling materials and supplies with a view to installing a similar system on the Australian railways which are operated by the government. The visitors are: C. W. J. Coleman, chief storekeeper; H. J. Canny, outdoor superintendent; G. H. Wion, assistant engineer of signals; H. E. Sergeant, stores branch officer, all of the Victorian railways and W. H. Clarke, comptroller of stores, New South Wales government railways.

Intimidation of Negro Workers

The continued harassment of negro trainmen and workers on the Illinois Central in the southern states has led to the belief that an organized plot exists to intimidate and kill them in an effort to drive the negroes from the line. Two negroes have been ambushed and killed on the Yazoo & Mississippi Valley near Lake Cormorant, Miss.; one has been slain near Raines, Tenn., just out of Memphis, another met death as a train was passing Aberdeen Junction near the same city and two were wounded near Sturgis on the Aberdeen and Durant branch of the road. The last death reported was near Water Valley, Miss., the latter part of July, for which two men were indicted on July 30 at Water Valley, Miss. Special agents of the railroad have been working on the cases for several months and are exerting every effort to protect the negro employees of the road and run down the conspirators.

Net in June, $51,778,000

The net railway operating income of the railways in June was $51,778,000, which was $14,697,346 more than in May. The figures are those of 202 Class I railroads operating 235,548 miles of line.

The earnings for June, says the statement of the Association of Railway Executives in which the figures are given, on the basis of the tentative valuation fixed by the Interstate Commerce Commission for rate making purposes under the Transportation Act, would be at the annual rate of return of 3.1 per cent compared with 2.4 per cent the previous month. Tabulations show, however, that the railroads fell short $47,295,000 or 47.7 per cent of earning 6 per cent contemplated by the act. This was, however, the largest amount earned during any one month by the railroads since last November, when their net operating income was $54,343,793.

The operating ratio in June, 1921, was 82.34 per cent as compared with 85.43 per cent in May. In June, 1920, it was 96.84 per cent, in May, 1920, 95.60 per cent.

Operating revenues in June for the railroads of the United States totaled $461,127,000, which was a decrease of 6.7 per cent compared with those for the same month last year. Operating expenses were $379,688,000 or 20.7 per cent less than in June one year ago. The net operating income was $51,778,000 compared with an operating deficit of $14,612,000 during the same month in 1920.

From September 1, 1920, when the guaranty period ended, to June 30, last, the net operating income of the rail carriers was $368,445,000, which, on the basis of their tentative valuation, would be at the annual rate of return of 2.5 per cent. This amount falls short $516,626,000 of that contemplated to be earned under the rates established by the commission.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1921

Name of road.		Average mileage operated during period.	Operating revenues			Operating expenses						Operating ratio.	Net from railway operations.	Operating income (or loss).	Net after rentals.	Net after rentals, 1920.
			Freight.	Passenger.	Total (inc. misc.)	Maintenance of Way and structure.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.					
Alabama & Vicksburg	June	141	$170,758	$60,092	$247,211	$50,273	$45,983	$7,744	$139,867	$12,120	$258,268	104.47	—$11,058	—$29,522	—$25,046	$48,669
	6 mos.	141	1,133,850	357,113	1,598,223	336,249	360,538	49,190	798,430	72,562	1,632,207	102.13	—33,984	—147,527	—117,622	308,797
Vicksburg, Shreveport & Pacific	June	171	229,612	77,024	339,915	60,365	54,770	9,132	130,583	13,181	270,806	79.67	69,110	52,461	40,695	46,939
	6 mos.	171	1,398,554	534,347	2,047,287	355,232	462,188	58,605	844,460	84,608	1,822,518	89.02	224,769	133,333	55,241	464,329
Ann Arbor	June	293	346,872	47,354	412,045	61,724	93,255	9,074	184,197	12,276	360,592	87.51	51,452	31,021	24,823	—20,208
	6 mos.	293	1,887,411	300,621	2,304,447	302,160	553,033	50,972	1,118,897	88,715	2,113,879	91.73	190,568	73,875	12,831	—306,366
Atchison, Topeka & Santa Fe	June	8,828	9,946,458	3,921,929	14,850,226	511,180	2,512,362	251,538	5,334,072	350,540	8,932,955	60.03	5,917,272	5,059,719	5,238,928	2,217,296
	6 mos.	8,828	59,354,588	23,708,070	89,200,128	10,703,068	20,197,825	1,585,456	34,838,283	2,282,925	69,389,792	77.79	19,810,337	14,714,786	15,041,276	19,002,420
Gulf, Colorado & Santa Fe	June	1,907	1,919,293	411,046	2,437,914	65,460	466,739	36,986	766,869	82,624	1,408,831	57.79	1,029,083	950,216	897,879	—346,707
	6 mos.	1,907	11,155,824	2,332,566	14,011,192	2,385,451	3,190,480	247,398	5,133,304	457,216	11,390,345	81.29	2,620,847	2,164,321	1,781,907	—234,070
Panhandle & Santa Fe	June	857	498,332	171,189	737,824	—38,593	212,693	5,685	249,276	18,772	446,126	60.47	291,698	270,060	244,008	—54,818
	6 mos.	857	3,125,477	779,543	4,133,565	598,826	1,252,237	40,305	1,587,506	132,222	3,616,051	87.48	517,514	400,497	195,116	—528,475
Atlanta & West Point	June	93	100,662	71,078	196,055	28,988	48,852	9,114	85,948	11,859	188,513	96.15	7,542	—7,975	—15,312	7,279
	6 mos.	93	610,533	484,806	1,254,772	165,704	294,795	48,669	525,552	70,702	1,129,582	74.08	125,190	32,090	21,027	253,061
Western of Alabama	June	133	120,207	64,043	204,404	31,196	53,790	9,018	72,475	11,963	181,694	88.89	22,711	13,910	12,476	—12,216
	6 mos.	133	654,222	435,072	1,214,118	175,169	337,377	47,796	473,394	66,847	1,121,016	92.33	93,102	40,299	55,343	229,427
Atlanta, Birmingham & Atlantic	June	639	231,420	28,244	261,610	80,098	107,904	18,876	188,217	12,966	408,092	155.98	—146,482	—169,468	—187,543	—140,836
	6 mos.	639	1,142,552	218,085	1,489,894	476,961	607,001	127,356	1,094,925	91,411	2,398,270	160.97	—908,376	—1,023,124	—1,020,819	—485,426
Atlantic Coast Line	June	4,887	3,405,951	1,098,730	4,938,183	742,044	1,041,542	82,699	2,502,049	140,528	4,529,713	91.72	408,469	130,836	75,806	—1,194,645
	6 mos.	4,888	24,215,817	9,755,084	36,615,406	5,004,440	7,503,574	589,779	17,159,777	884,742	31,368,879	85.67	5,246,527	3,636,325	2,828,764	1,800,863
Charleston & Western Carolina	June	342	196,724	39,298	247,682	52,856	82,855	5,394	133,742	6,939	281,787	113.73	—34,104	—44,163	—53,509	—63,926
	6 mos.	...	1,355,376	255,073	1,698,092	363,944	452,892	39,844	906,015	43,214	1,805,909	106.35	—107,817	—170,377	—223,025	—217,750
Baltimore & Ohio	June	5,184	12,822,142	2,495,500	16,316,024	2,306,342	3,591,008	286,063	8,134,997	562,941	14,987,705	91.86	1,328,318	732,128	321,133	—587,350
	6 mos.	5,184	75,544,707	14,736,031	96,230,951	10,098,892	21,627,878	1,622,783	45,976,483	3,361,158	83,432,781	86.90	12,798,170	9,304,941	7,630,465	384,528
Baltimore & Ohio Chicago Term.	June	90	.....	.....	195,443	38,559	30,539	1,312	122,096	14,307	210,517	107.71	—15,074	—53,430	25,375	—138,600
	6 mos.	90	.....	.....	1,208,658	190,055	246,843	8,753	831,665	88,120	1,388,571	114.89	—179,913	—401,168	161,547	—460,312
Staten Island Rapid Transit	June	23	76,660	116,556	216,099	41,663	17,477	2,731	126,387	13,714	201,972	93.46	14,128	—1,551	—12,809	—34,298
	6 mos.	23	497,180	587,724	1,197,109	211,177	176,995	10,927	768,941	80,556	1,248,596	104.30	—51,487	—132,034	—200,342	—307,819
Bangor & Aroostook	June	659	348,024	66,814	438,983	78,775	103,861	4,934	171,747	18,615	382,250	87.08	56,734	24,005	35,754	—37,889
	6 mos.	659	3,152,579	490,925	3,776,160	727,490	977,388	27,828	1,353,299	127,312	3,246,385	85.97	529,774	313,713	355,504	306,706
Belt Ry. Co. of Chicago	June	31	.....	.....	457,235	87,883	61,363	1,179	198,048	10,214	358,688	78.45	98,547	68,285	132,442	133,683
	6 mos.	31	.....	.....	2,503,441	299,382	330,285	6,764	1,343,737	66,547	2,046,714	81.76	456,726	303,296	803,709	810,489
Bessemer & Lake Erie	June	225	1,601,603	33,894	1,656,529	137,126	391,768	15,753	430,422	29,340	1,008,908	60.90	647,622	615,484	587,997	606,504
	6 mos.	225	5,548,440	245,953	5,923,352	1,089,560	2,481,764	99,801	2,185,677	183,996	6,070,664	102.49	—147,312	—330,137	—50,454	1,884,488
Bingham & Garfield	June	35	10,344	447	11,425	21,341	3,777	1,009	6,252	3,312	35,745	212.87	—24,319	—30,916	—31,111	49,165
	6 mos.	35	95,694	3,496	106,495	106,477	29,654	9,514	55,640	26,284	228,320	214.40	—121,825	—152,504	—115,397	270,084
Boston & Maine	June	2,300	4,038,121	1,843,813	6,440,900	1,090,199	1,190,310	52,349	3,473,058	267,484	6,099,462	94.70	341,438	83,583	—159,367	106,258
	6 mos.	2,300	23,087,613	11,004,110	37,149,810	6,796,561	8,128,528	362,305	21,692,651	1,576,118	38,716,457	104.22	—1,566,649	—3,098,568	—4,485,385	—5,999,713
Brooklyn Eastern District Term	June	9	91,492	.....	96,104	7,774	17,008	25	39,060	6,269	70,136	72.98	25,968	19,055	19,055	5,240
	6 mos.	9	620,218	.....	661,068	44,058	129,147	1,468	255,837	43,447	473,959	71.70	187,109	146,337	146,437	—246,755
Buffalo & Susquehanna	June	252	120,812	5,503	130,268	43,980	71,089	2,798	61,473	10,544	189,884	145.76	—59,615	—62,915	—35,763	—11,180
	6 mos.	252	973,476	43,483	1,035,466	237,238	576,369	18,877	411,597	64,814	1,308,894	126.41	—273,428	—293,228	—50,849	41,624
Buffalo, Rochester & Pittsburgh	June	589	998,575	135,963	1,191,356	185,081	351,672	15,551	512,875	43,790	1,111,384	93.29	79,973	44,672	31,093	—242,237
	6 mos.	589	5,931,916	912,844	7,128,025	848,792	2,323,220	111,343	3,410,806	268,278	6,977,902	97.89	150,122	—60,419	333,104	—76,697
Canadian Pacific Lines in Maine	June	233	98,137	36,716	149,741	55,967	28,686	3,815	73,673	3,899	166,042	110.89	—16,300	—31,300	—49,681	—71,533
	6 mos.	233	1,179,896	315,227	1,599,809	271,344	272,187	22,189	831,474	23,384	1,420,578	88.80	179,232	89,232	—4,096	—388,240
Carolina, Clinchfield & Ohio	June	291	555,017	42,459	609,085	70,950	133,826	21,377	179,438	22,478	427,949	70.26	181,136	150,977	186,580	235,127
	6 mos.	291	3,243,891	256,786	3,581,721	536,666	936,215	136,503	1,115,375	135,025	2,858,190	79.80	723,531	541,674	962,718	1,153,907
Central of Georgia	June	1,913	1,335,441	457,468	1,941,432	292,090	423,618	64,048	854,066	80,198	1,718,287	88.51	223,145	144,884	152,922	—254,979
	6 mos.	1,913	7,293,535	2,835,464	11,132,682	1,881,117	2,452,805	388,355	5,305,201	476,087	10,539,968	94.68	592,714	91,855	97,209	—62,831
Central of New Jersey	June	685	3,366,081	838,747	4,426,928	734,202	657,237	30,301	1,849,271	105,464	3,395,490	76.70	1,031,438	748,776	688,283	475,758
	6 mos.	685	19,501,826	4,334,127	25,149,836	2,830,481	5,264,806	207,362	11,349,219	668,248	20,445,025	81.29	4,704,811	3,174,883	3,073,510	—1,856,480
Central Vermont	June	413	400,852	83,157	533,235	106,947	154,446	10,599	314,490	27,082	615,197	115.37	—81,962	—103,086	—117,817	—123,982
	6 mos.	413	2,236,882	596,412	3,086,836	577,860	876,048	69,765	2,101,593	130,114	3,764,528	121.95	—677,692	—803,456	—850,415	—846,695
Chesapeake & Ohio	June	2,545	7,021,562	1,031,309	8,564,711	1,165,417	1,905,467	60,612	2,909,938	170,208	6,221,076	72.64	2,343,635	2,113,520	1,944,753	245,461
	6 mos.	2,543	33,739,326	5,833,440	41,883,146	5,826,738	10,575,702	399,349	16,571,548	1,025,163	34,540,004	82.47	7,343,142	5,956,248	5,041,319	5,483,768
Chicago & Alton	June	1,050	1,856,586	584,847	2,580,089	471,123	752,892	49,927	1,017,719	62,293	2,362,770	91.58	217,319	141,604	11,735	206,855
	6 mos.	1,050	10,285,786	3,370,779	14,467,083	1,964,773	4,144,997	303,790	6,368,892	381,741	13,229,829	54.07	1,237,255	743,350	—44,825	278,098
Chicago & Eastern Illinois	June	1,130	1,531,932	418,943	2,101,847	205,900	690,183	36,802	900,800	65,021	1,912,759	91.00	189,088	103,416	93,777	285,658
	6 mos.	1,130	9,444,976	2,514,305	12,850,818	1,408,098	4,842,361	217,167	5,904,612	418,592	12,873,730	100.18	—22,912	—536,312	—380,322	1,289,184
Chicago & North Western	June	8,402	7,816,742	2,781,187	11,864,185	2,391,425	2,002,555	172,210	5,321,279	356,951	10,306,566	86.87	1,557,619	860,648	894,038	29,868
	6 mos.	8,402	44,137,088	16,859,650	67,606,358	10,415,003	17,901,675	973,111	34,734,811	2,238,070	66,779,967	98.78	826,451	—3,778,025	—3,567,055	—1,031,164
Chicago, Burlington & Quincy	June	9,393	9,506,599	2,755,472	13,343,856	1,920,902	2,753,216	188,060	4,830,224	376,277	10,179,411	76.29	3,164,445	2,363,090	2,340,197	—445,579
	6 mos.	9,392	56,581,730	15,384,839	78,397,916	8,703,506	16,436,015	1,146,163	32,701,493	2,463,382	62,190,946	79.33	16,206,970	11,381,806	10,672,391	4,915,817
Chicago Great Western	June	1,496	1,422,878	426,559	2,004,593	316,698	343,390	67,461	832,459	58,323	1,636,180	81.62	368,413	309,160	170,519	—270,779
	6 mos.	1,496	8,329,057	2,467,174	11,659,886	1,433,711	2,671,727	402,648	5,322,568	375,396	10,304,484	88.38	1,355,402	916,598	284,147	—1,063,922
Chicago, Indianapolis & Louisville	June	557	896,799	274,429	1,286,639	180,286	328,632	32,481	489,550	36,226	1,082,999	84.17	203,639	137,253	57,748	—48,537
	6 mos.	555	5,042,121	1,633,704	7,313,189	842,145	2,027,653	189,421	3,104,608	220,541	6,474,228	88.53	838,961	481,373	—778	—332,785
Chicago Junction	June	12	.....	.....	418,834	12,602	40,154	165	187,463	15,517	255,901	61.10	162,932	137,500	209,357	—263,947
	6 mos.	12	.....	.....	2,461,410	303,429	254,278	973	1,197,196	89,105	1,844,981	74.96	616,429	469,452	891,683	—804,717

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1921—CONTINUED

Name of road.		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structure.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operations.	Operating income (or loss).	Net after rentals.	Net after rentals, 1920.
Chicago, Milwaukee & St. Paul	June	10,621	$8,692,157	$2,456,302	$12,353,001	$1,858,124	$2,508,205	$175,881	$5,367,257	$433,253	$10,456,789	84.65	$1,896,211	$1,101,136	$807,091	—$121,086
	6 mos.	10,616	47,801,563	13,397,320	67,769,580	8,531,405	17,366,896	1,057,352	34,450,858	2,430,509	64,277,993	94.85	3,491,587	—976,481	—2,815,724	—10,397,494
Chicago, Peoria & St. Louis	June	247	130,588	21,360	160,589	27,859	41,000	4,683	95,147	11,348	180,036	112.11	—19,447	—30,094	—37,231	—3,621
	6 mos.	247	756,433	149,009	956,619	179,757	343,145	28,424	642,816	73,077	1,267,218	132.47	—310,600	—367,599	—382,095	—241,154
Chicago, Rock Island & Pacific	June	7,661	7,738,261	2,694,474	11,106,855	1,496,625	2,618,977	180,483	4,606,455	248,443	9,218,780	83.00	1,888,074	1,417,255	1,080,715	—378,939
	6 mos.	7,661	43,489,440	14,660,696	62,313,356	8,306,785	14,267,711	1,047,286	27,711,922	1,543,156	53,180,155	85.34	9,133,201	6,465,698	4,513,425	966,168
Chicago, Rock Island & Gulf	June	461	508,719	103,670	646,319	80,968	88,783	13,242	302,132	16,339	502,605	77.76	143,715	132,683	105,525	86,654
	6 mos.	461	2,724,328	628,754	3,568,395	532,108	497,595	79,528	1,741,400	98,567	2,956,905	82.86	611,490	533,102	375,594	578,909
Chic., St. Paul, Minn. & Omaha	June	1,749	1,381,982	609,112	2,145,519	324,423	301,387	33,377	1,069,195	76,406	1,816,113	84.65	329,406	188,528	152,306	177,769
	6 mos.	1,749	8,763,684	3,488,356	13,046,971	1,609,198	3,158,495	214,081	7,204,340	499,561	12,758,233	97.79	288,738	—531,421	—769,032	1,462,649
Chic., Terre Haute & Southeastern	June	374	364,846	21,425	397,789	34,641	123,217	3,816	145,272	12,041	320,406	80.55	77,383	54,883	78,428	121,426
	6 mos.	374	2,155,400	149,448	2,386,767	360,534	935,145	33,706	1,012,627	77,067	2,426,551	101.67	—39,785	—168,848	605	345,484
Cin., Indianapolis & Western	June	321	218,868	58,066	288,806	83,430	111,305	12,472	149,173	19,118	377,066	130.56	—88,260	—102,693	—114,346	—53,777
	6 mos.	321	1,260,747	346,256	1,697,749	349,779	579,335	71,251	926,499	129,338	2,070,285	121.94	—372,536	—464,452	—499,726	—431,913
Colorado & Southern	June	1,099	582,980	183,624	804,886	223,455	200,300	14,048	337,423	52,537	839,159	104.26	—34,273	—98,701	—96,100	50,387
	6 mos.	1,097	4,689,290	1,107,439	6,196,755	775,624	1,542,374	71,375	2,335,430	318,459	5,089,094	82.13	1,107,660	652,877	756,048	798,136
**Ft. Worth & Denver City	June	454	543,141	209,085	789,072	73,232	161,312	12,853	169,793	35,408	459,053	58.18	330,020	305,155	310,932	49,012
	6 mos.	454	3,724,798	1,261,621	5,238,255	476,836	1,035,236	70,025	1,877,982	224,542	3,722,354	71.06	1,515,901	1,346,596	1,397,445	—6,667
**Wichita Valley	June	255	70,066	27,843	102,306	23,019	21,040	155	17,956	1,493	63,643	62.21	38,663	33,261	24,839	—16,760
	6 mos.	255	577,345	168,557	786,842	170,256	74,131	330	333,386	10,276	587,740	74.70	199,102	164,989	103,403	16,354
Delaware & Hudson	June	880	3,235,025	312,397	3,723,607	433,028	622,333	31,188	1,390,659	158,760	2,663,542	71.53	1,060,066	981,457	1,062,854	—198,477
	6 mos.	880	19,671,373	1,783,309	22,411,257	2,513,473	5,984,498	233,308	9,626,355	976,882	19,454,777	86.81	2,956,480	2,401,058	2,679,041	—927,018
Dela., Lackawanna & Western	June	997	5,659,660	1,226,986	7,566,133	1,023,675	1,589,994	116,998	2,854,888	175,152	5,817,275	76.89	1,748,858	1,367,221	1,395,173	520,552
	6 mos.	997	31,568,672	5,859,351	42,279,985	4,777,917	10,312,949	650,824	18,514,904	1,077,421	35,665,989	84.36	6,613,996	4,321,702	4,662,496	612,544
Denver & Rio Grande	June	2,593	1,269,208	430,442	1,858,507	750,983	596,446	41,126	873,264	82,889	2,394,991	128.87	—536,484	—686,748	—638,058	18,227
	6 mos.	2,590	10,459,446	2,768,746	14,240,767	2,301,234	3,866,338	243,163	5,411,909	506,231	12,603,194	88.50	1,637,572	750,745	1,131,102	3,118,365
Denver & Salt Lake	June	255	243,893	41,003	298,097	46,703	75,911	903	105,769	7,526	236,813	79.44	61,284	53,280	57,840	20,877
	6 mos.	255	952,124	146,557	1,161,269	278,148	426,926	5,610	563,205	42,973	1,316,862	113.40	—155,594	—203,714	—187,982	—765,494
Detroit & Mackinac	June	385	136,907	30,506	177,363	29,762	46,795	2,772	67,299	5,988	152,517	85.98	24,846	13,684	10,072	4,051
	6 mos.	376	669,509	190,754	916,795	150,506	284,235	16,306	423,314	40,804	914,905	99.79	1,890	—70,156	—50,627	—70,319
Detroit, Toledo & Ironton	June	454	686,355	12,495	713,527	82,222	80,794	6,612	188,517	18,237	376,383	52.75	337,144	327,003	261,260	—135,932
	6 mos.	454	2,881,428	84,528	3,033,073	561,779	490,140	47,718	1,017,748	101,906	2,212,596	72.95	820,477	760,188	567,618	—238,283
Duluth & Iron Range	June	291	633,050	18,044	701,531	158,460	85,607	680	174,942	21,913	442,119	63.02	259,412	218,911	226,708	914,842
	6 mos.	291	1,767,760	155,778	2,128,259	597,048	697,508	8,151	1,054,077	130,311	2,490,682	117.03	—362,423	—501,344	—507,624	1,019,245
Duluth, Missabe & Northern	June	408	1,763,400	48,572	1,993,538	220,276	166,791	2,453	357,428	29,031	777,829	39.02	1,215,709	975,324	969,899	1,915,705
	6 mos.	406	3,753,838	328,858	4,497,117	1,215,891	1,181,955	18,311	1,482,406	144,866	4,054,998	90.17	442,119	—54,828	—71,915	1,900,008
Duluth, South Shore & Atlantic	June	591	239,896	93,596	362,329	128,485	81,764	6,510	194,521	12,605	430,021	118.68	—67,692	—94,706	—103,809	14,073
	6 mos.	591	1,461,525	584,417	2,252,068	411,867	572,932	42,772	1,345,087	78,792	2,495,112	110.79	—243,044	—427,165	—504,891	—285,957
Duluth, Winnipeg & Pacific	June	178	86,083	21,352	119,575	37,401	36,536	4,528	61,610	8,180	148,255	123.99	—28,680	—34,774	—36,887	9,589
	6 mos.	178	1,149,766	198,743	1,390,988	113,954	305,841	34,620	689,664	64,427	1,208,506	86.88	107,680	35,920	27,150	80,712
Elgin, Joliet & Eastern	June	836	1,202,658	12	1,311,078	195,105	253,275	12,407	453,548	41,530	955,843	72.91	355,234	285,228	193,884	443,577
	6 mos.	836	9,452,015	54	10,414,301	1,089,180	2,805,375	79,560	3,621,573	250,438	7,845,605	75.33	2,568,696	2,124,178	1,324,817	854,948
El Paso & Southwestern	June	1,027	794,013	183,401	1,025,721	20,310	149,491	27,113	351,864	46,907	563,779	54.96	461,942	373,534	281,182	405,023
	6 mos.	1,027	4,448,631	1,251,253	6,003,017	1,066,109	1,278,633	175,537	1,914,685	305,571	4,800,073	79.98	1,202,044	640,193	460,130	1,623,832
Erie	June	1,989	6,424,184	1,156,796	8,112,297	984,511	2,604,109	135,427	3,404,015	306,352	7,478,602	92.19	633,695	332,630	534,481	—2,048,217
	6 mos.	1,989	39,442,097	6,914,641	49,596,485	5,288,282	15,267,816	781,137	23,461,924	1,880,536	46,947,282	94.66	2,649,204	898,637	2,488,876	—7,543,100
Chicago & Erie	June	269	609,570	73,205	748,409	105,738	131,156	20,169	429,938	41,380	729,235	97.44	19,174	—24,586	—443,022	—6,831
	6 mos.	269	4,568,600	411,813	5,325,183	641,598	915,164	116,597	3,104,403	254,996	5,034,365	94.54	290,918	28,393	—2,185,598	—1,335,978
New Jersey & New York	June	47	17,240	102,528	124,023	14,185	17,041	1,901	58,675	2,459	94,262	76.00	29,761	26,836	—1,257	—10,041
	6 mos.	47	108,648	590,640	719,990	73,948	117,443	10,675	422,275	15,579	639,915	88.83	80,075	62,452	—101,349	—150,396
N. Y., Susquehanna & Western	June	135	329,929	84,389	458,992	52,216	48,129	3,791	186,819	8,596	299,551	65.26	159,440	133,362	143,938	—108,805
	6 mos.	135	1,487,581	406,259	2,157,441	279,226	311,022	24,050	1,399,690	59,172	2,073,155	96.09	84,287	—71,230	—45,865	—545,537
Florida East Coast	June	764	523,370	221,737	874,874	251,772	230,041	11,219	371,798	28,068	898,470	102.70	—23,597	—71,200	—104,859	165,091
	6 mos.	764	4,648,109	2,613,968	8,295,665	1,372,674	1,376,146	90,627	2,972,137	181,274	6,087,191	73.38	2,208,474	1,867,356	1,600,082	1,994,018
Fort Smith & Western	June	253	77,534	22,683	109,467	31,061	28,969	4,729	53,774	6,890	126,714	115.76	—17,247	—22,747	—30,780	—4,103
	6 mos.	253	670,633	153,646	913,912	240,283	229,097	31,315	391,323	46,940	951,688	104.13	—38,775	—72,394	—102,871	—43,135
Georgia	June	328	285,753	105,833	412,195	36,993	83,141	19,399	229,159	22,786	391,721	95.03	20,474	14,466	15,061	—29,591
	6 mos.	328	1,797,323	666,388	2,636,265	286,695	683,519	121,716	1,478,278	128,358	2,699,632	102.40	—63,367	—99,314	—66,510	—94,698
Georgia & Florida	June	405	105,979	15,164	127,938	30,211	25,242	7,250	63,951	7,513	134,405	105.06	—6,467	—14,837	—26,717	—90,217
	6 mos.	405	536,682	102,549	691,403	169,889	125,908	44,680	363,467	49,656	755,058	109.21	—63,656	—111,088	—149,326	—475,910
Grand Trunk Western	June	352	1,085,169	173,774	1,321,349	214,088	301,021	33,829	550,057	48,753	1,153,117	87.27	168,232	112,081	—60,971	—429,728
	6 mos.	352	5,497,611	1,050,769	6,909,786	902,569	1,474,058	211,957	3,552,590	403,010	6,580,222	95.23	329,564	10,844	—898,920	—1,520,939
Atlantic & St. Lawrence	June	166	108,736	36,024	154,999	68,570	23,012	3,007	109,864	33,841	193,251	124.68	—38,252	—57,456	—153,507	—227,023
	6 mos.	166	1,204,812	246,487	1,573,471	341,073	252,631	19,659	903,465	95,837	1,615,843	102.69	—42,372	—158,722	—603,992	—940,390
Chi., Det. & Canada Gr. Tr. Jct.	June	62	105,318	14,924	129,756	19,593	21,890	2,543	53,399	3,666	101,185	77.98	28,571	21,933	3,422	—76,253
	6 mos.	62	823,548	90,739	963,476	89,869	111,172	15,937	417,988	30,299	665,029	69.02	297,547	265,720	147,883	—105,823
Detroit, Gr. Haven & Milwaukee	June	194	293,519	41,630	360,266	49,339	67,192	10,376	211,364	15,217	353,783	98.20	6,483	246	—106,417	—197,246
	6 mos.	194	1,395,448	179,836	1,793,968	296,634	328,392	49,556	1,266,302	114,432	2,067,891	115.27	—273,922	—306,881	—668,491	—756,455

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1921—CONTINUED

Name of road.		Average mileage operated during period.	Operating revenues			Operating expenses						Operating ratio.	Net from railway operations.	Operating income (or loss).	Net after rentals.	Net after rentals, 1920.
						Maintenance of										
			Freight.	Passenger.	Total (inc. misc.)	Way and structure.	Equipment.	Traffic.	Transportation.	General.	Total.					
Great Northern	June	8,163	$6,061,276	$1,440,264	$8,448,602	$1,400,561	$1,564,865	$153,329	$3,098,674	$233,506	$6,554,784	77.58	$1,893,819	$1,145,024	$1,187,985	$873,413
	6 mos.	8,165	29,495,454	7,926,122	41,903,787	7,241,169	9,707,645	847,459	19,767,176	1,511,431	39,208,590	93.57	2,695,198	—1,787,709	—1,611,160	1,163,463
Green Bay & Western	June	252	83,437	16,157	106,916	27,162	22,333	1,823	38,116	2,448	91,881	85.94	15,035	7,535	7,150	—20,651
	6 mos.	252	531,342	112,628	690,298	107,592	157,982	10,951	269,955	19,573	566,044	82.00	124,254	81,226	71,795	—4,289
Gulf Coast Lines	June	...	505,134	192,518	754,308	156,209	123,791	26,458	267,808	39,415	612,983	81.26	141,325	105,035	84,740	—118,004
	6 mos.	...	4,113,150	1,250,010	5,674,769	1,097,641	999,700	168,956	1,936,758	256,656	4,445,507	78.34	1,229,262	1,014,056	766,718	108,875
Gulf & Ship Island	June	307	167,005	44,242	225,263	45,004	41,804	5,328	87,626	13,514	193,600	85,94	31,664	12,400	2,284	—109,289
	6 mos.	307	1,032,140	266,284	1,391,474	268,213	275,570	41,504	550,175	83,741	1,221,299	87.77	170,174	53,050	56,172	—129,320
Gulf, Mobile & Northern	June	463	255,625	36,827	306,018	59,427	70,170	11,585	147,503	14,278	302,963	99.00	3,055	—19,629	—32,242	—101,094
	6 mos.	463	1,700,108	257,485	2,049,326	377,541	445,234	73,890	981,124	95,748	1,973,537	96.30	75,789	—28,322	—70,969	—362,190
Hocking Valley	June	350	1,304,052	104,112	1,520,862	196,545	466,052	9,790	526,803	38,145	1,237,291	81.35	283,571	196,593	137,645	110,073
	6 mos.	350	5,364,434	639,728	6,380,872	898,926	2,805,696	65,644	2,469,818	219,754	6,456,799	101.19	—75,927	—590,144	—480,365	868,834
Illinois Central	June	4,799	8,667,055	1,984,477	11,404,596	1,843,860	2,839,119	149,319	4,296,647	311,063	9,507,244	83.36	1,897,353	1,249,001	1,347,999	—202,798
	6 mos.	4,799	52,034,134	12,367,037	68,876,747	9,778,135	15,207,904	924,402	28,378,316	1,882,586	56,557,953	82.11	12,318,794	8,336,605	9,078,964	4,424,995
Yazoo & Miss. Valley	June	1,381	1,123,659	308,320	1,512,706	375,706	364,047	23,737	674,770	49,068	1,482,079	97.98	30,627	—89,174	—89,261	—250,056
	6 mos.	1,381	7,389,546	2,071,945	9,994,180	2,008,166	2,051,860	154,450	4,621,924	331,382	9,171,069	91.76	823,111	176,089	149,273	7,329
International & Great Northern	June	1,159	1,099,234	278,113	1,461,262	237,404	307,921	26,657	731,024	53,706	1,363,731	93.33	97,532	48,385	—53,795	—377,112
	6 mos.	1,159	7,202,854	1,574,410	9,473,963	1,392,669	1,869,126	155,276	5,122,692	331,444	8,920,463	94.16	553,501	334,072	—423,960	—1,776,530
Kansas City, Mexico & Orient	June	272	91,192	15,714	116,058	46,288	40,591	5,753	63,269	13,756	169,657	146.18	—53,599	—61,639	—64,552	—49,764
	6 mos.	272	706,702	76,418	833,332	206,455	286,780	33,945	461,135	81,120	1,069,435	128.33	—236,104	—284,376	—264,610	—241,113
Kans. City, Mex. & Orient of Tex.	June	465	112,005	16,770	134,656	41,331	54,781	5,057	95,418	7,058	203,644	151.23	—68,988	—75,138	—97,992	—64,904
	6 mos.	465	868,880	102,268	1,016,538	274,987	335,031	33,803	666,731	41,446	1,351,999	133.00	—335,461	—372,386	—473,210	—453,389
Kansas City Southern	June	779	1,318,670	204,231	1,631,238	232,526	280,518	42,736	577,436	76,690	1,208,683	74.10	422,554	345,325	319,859	132,133
	6 mos.	779	8,198,381	1,161,366	9,996,367	1,242,801	1,716,648	243,816	3,734,607	451,869	7,379,326	73.82	2,617,041	2,153,885	2,070,968	890,946
Texarkana & Ft. Smith	June	93	122,068	16,824	150,132	25,476	28,358	3,950	69,944	8,566	136,892	91.18	13,240	5,887	—9,170	40,311
	6 mos.	93	889,851	108,170	1,090,731	110,826	134,331	29,089	418,223	49,698	741,661	68.00	349,070	304,899	143,549	267,054
Kansas City Terminal	June	27	.....	.....	119,201	28,422	23,731	.....	51,003	3,492	109,034	91.47	10,166	—16,344	217,802	218,344
	6 mos.	27	.....	.....	757,712	98,715	128,380	.....	332,958	22,119	597,908	78.91	159,805	536	1,303,402	1,070,291
Kansas, Oklahoma & Gulf	June	314	124,452	11,368	142,922	46,889	14,270	3,957	73,739	9,991	149,029	104.27	—6,107	—18,193	—20,524	—45,732
	6 mos.	320	985,474	102,136	1,147,873	305,071	220,428	24,953	539,641	65,284	1,156,562	100.76	—8,688	—63,328	—119,421	—251,865
Lake Superior & Ishpeming	June	33	20,201	103	26,311	16,857	13,575	206	9,644	2,619	42,900	163.05	—16,589	—22,622	—22,512	188,298
	6 mos.	33	58,741	1,494	74,139	109,846	114,268	1,576	61,557	20,821	308,068	415.53	—233,929	—267,017	—263,578	130,588
Lake Terminal	June	13	.....	.....	94,004	8,083	12,165	.....	50,142	254	70,644	75.15	23,361	17,457	18,173	—10,312
	6 mos.	13	.....	.....	697,620	99,738	136,445	.....	411,426	1,007	648,616	92.98	49,004	12,948	13,100	—131,433
Lehigh & Hudson River	June	96	257,479	3,694	269,240	30,092	31,682	1,746	112,469	7,905	183,894	68.30	85,346	73,195	48,612	41,772
	6 mos.	96	1,510,944	24,051	1,594,707	163,285	264,149	12,155	714,889	46,923	1,201,401	75.34	393,306	320,396	185,898	—74,412
Lehigh & New England	June	237	405,001	1,982	431,182	76,910	104,189	3,917	133,975	15,821	334,784	77.64	96,398	80,945	82,037	73,505
	6 mos.	237	2,111,720	12,785	2,210,735	308,147	534,272	35,512	810,123	101,400	1,786,252	80.80	424,484	331,766	416,680	384,250
Lehigh Valley	June	1,448	5,484,276	671,290	6,579,734	898,374	2,100,802	97,346	2,500,534	129,565	5,751,881	87.42	827,853	706,220	664,870	—1,328,431
	6 mos.	1,448	30,655,935	3,700,053	36,842,040	3,895,832	14,435,659	638,766	16,621,603	886,926	36,617,831	99.39	224,209	—870,183	—825,613	—6,441,143
Los Angeles & Salt Lake	June	1,168	1,034,555	567,944	1,749,608	319,682	334,403	47,034	535,778	34,627	1,318,376	75.35	431,232	339,492	276,693	469,695
	6 mos.	1,168	6,271,332	2,881,002	9,964,066	2,085,901	2,036,192	311,694	3,497,868	223,632	8,418,613	84.49	1,545,454	984,589	722,795	1,734,990
Louisiana & Arkansas	June	302	222,939	34,916	264,640	48,902	69,688	7,296	89,306	7,891	223,039	84.28	41,602	25,106	18,090	34,801
	6 mos.	302	1,426,597	208,651	1,683,881	331,537	383,275	37,075	623,796	54,395	1,428,258	84.82	255,622	155,672	108,686	456,569
Louisiana Ry. & Nav. Co.	June	343	227,246	36,257	274,398	54,069	34,790	9,841	107,605	12,385	217,991	79.44	56,407	46,223	14,450	—31,253
	6 mos.	343	1,523,268	206,036	1,846,383	428,445	262,925	60,482	793,953	76,941	1,626,957	87.79	225,426	128,696	12,796	—54,912
Louisville & Nashville	June	5,043	7,352,571	1,911,747	9,829,545	2,105,536	2,965,677	217,749	4,284,264	267,139	9,866,215	100.37	—36,669	—341,579	—474,769	—1,754,271
	6 mos.	5,043	42,515,162	11,740,861	57,604,139	9,360,982	17,966,821	1,299,988	27,310,456	1,609,617	57,687,204	100.14	—83,065	—1,912,302	—2,589,213	2,337,998
Louisville, Henderson & St. Louis	June	199	142,484	63,771	218,403	44,286	59,766	6,667	86,698	8,464	205,882	94.27	12,521	5,142	—9,592	9,619
	6 mos.	199	913,844	372,270	1,406,985	277,024	271,837	41,047	559,691	55,443	1,205,043	85.65	201,943	157,633	71,181	142,554
Maine Central	June	1,215	1,033,136	428,371	1,595,842	310,707	370,747	11,898	765,550	46,631	1,509,392	94.52	86,450	—19,222	—15,795	106,554
	6 mos.	1,215	7,474,122	2,321,645	10,476,771	2,090,639	3,157,174	78,932	5,654,444	308,314	11,297,431	107.83	—820,659	—1,454,461	—1,626,493	—1,226,087
Midland Valley	June	388	231,020	73,155	320,814	66,522	62,061	4,406	119,327	17,228	269,544	84.02	51,270	43,131	37,562	74,092
	6 mos.	388	1,661,521	490,809	2,251,298	534,300	411,602	30,498	809,085	129,312	1,912,559	84.95	238,739	189,724	157,936	287,645
Minneapolis & St. Louis	June	1,650	1,004,179	188,167	1,253,389	225,046	306,215	28,338	592,211	44,081	1,196,001	95.42	57,387	—17,815	—23,755	—280,625
	6 mos.	1,650	6,167,070	1,176,021	7,692,033	1,125,060	2,053,476	152,230	4,217,495	269,524	7,818,114	101.64	—126,081	—584,527	—683,653	—489,177
**Minn., St. Paul & S. S. Marie	June	4,242	2,276,128	705,280	3,281,158	674,329	731,627	50,811	1,542,923	106,262	3,133,996	95.51	147,162	—103,704	—178,933	424,038
	6 mos.	4,242	13,999,835	3,860,543	19,378,742	3,534,303	5,323,779	312,322	10,194,537	688,848	20,178,889	104.13	—800,147	—2,518,787	—2,886,602	333,251
Mississippi Central	June	164	73,437	21,363	97,199	21,452	37,472	2,624	31,125	6,629	99,303	102.17	—2,103	—7,709	—6,729	—65,672
	6 mos.	164	381,802	112,657	513,416	96,386	190,858	16,204	194,158	42,527	540,132	105.20	—26,717	—65,766	—61,416	—251,621
Missouri & North Arkansas	June	364	56,244	28,704	92,625	34,701	26,864	2,960	65,122	5,977	135,623	146.42	—42,998	—47,363	—57,724	—51,285
	6 mos.	364	361,532	161,408	566,083	214,633	225,226	21,909	376,537	39,080	877,372	154.99	—311,289	—338,604	—396,900	—249,547
Missouri, Kansas & Texas	June	1,714	1,962,513	566,831	2,670,216	407,186	749,226	54,157	901,767	97,848	2,215,803	84.99	454,413	298,018	401,130	—170,609
	6 mos.	1,715	11,264,876	3,571,221	16,004,242	2,130,797	4,781,301	298,410	5,897,761	612,360	13,719,811	85.73	2,284,431	1,506,330	2,139,935	1,748,254
Mo., Kans. & Tex. of Tex	June	1,739	1,300,416	573,447	2,017,792	285,269	348,877	45,684	842,532	87,243	1,624,580	80.51	393,212	344,857	168,572	—1,193,941
	6 mos.	1,739	8,845,842	3,379,705	13,200,106	1,898,014	2,407,305	262,555	5,702,842	589,292	10,943,762	82.91	2,256,344	1,966,577	511,303	—4,771,702
Wichita Falls & Northwestern	June	328	113,396	30,084	152,594	56,187	28,376	1,415	83,367	7,969	177,261	116.17	—24,668	—35,531	—57,982	—87,002
	6 mos.	328	889,967	176,448	1,124,994	212,462	198,084	6,293	466,418	45,866	928,774	82.56	196,219	130,791	13,742	—451,477

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1921—CONTINUED

Name of road.		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structure.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operations.	Operating income (or loss).	Net after rentals.	Net after rentals, 1920.
Missouri Pacific	June	7,300	$6,490,163	$1,534,066	$8,584,384	$1,801,675	$1,941,710	$136,748	$3,525,088	$289,085	$7,720,749	89.90	$863,634	$525,697	$258,630	$524,358
	6 mos.	7,300	38,659,470	9,667,715	52,400,955	9,386,620	11,721,511	999,332	23,387,680	1,779,424	47,436,387	90.53	4,964,568	3,159,923	2,071,521	1,345,774
Mobile & Ohio	June	1,155	1,096,048	141,679	1,303,285	222,827	487,377	37,560	688,993	53,496	1,411,685	108.22	—108,399	—129,999	—144,900	—578,234
	6 mos.	1,165	7,855,706	936,099	9,241,562	1,320,451	2,603,804	286,975	4,086,633	321,662	8,627,560	93.36	614,002	285,469	252,321	—500,540
Monongahela	June	106	270,019	33,022	307,340	33,179	74,163	2,407	92,969	7,878	260,594	84.79	46,946	40,446	19,161	—93,853
	6 mos.	106	1,636,438	220,980	1,885,174	482,539	432,790	12,529	628,611	51,070	1,607,538	85.27	277,636	238,636	—72,522	—465,974
Monongahela Connecting	June	7	.....	.....	51,769	9,132	10,076	506	28,158	5,918	53,790	103.90	—2,021	—3,689	—9,162	—43,101
	6 mos.	7	.....	.....	370,065	56,457	86,531	3,304	213,002	38,359	397,653	107.46	—27,588	—38,439	—65,822	—264,600
Montour	June	56	140,487	990	144,362	36,908	48,008	1,150	34,683	7,134	127,882	88.58	16,479	11,421	33,615	51,328
	6 mos.	56	784,557	6,695	803,784	155,865	378,855	6,933	225,733	43,807	811,247	100.93	—7,462	—30,385	119,067	58,968
Nasl ville, Chatt. & St. Louis	June	1,258	1,099,755	413,801	1,612,637	208,900	393,890	69,698	736,317	55,001	1,468,839	91.08	143,797	89,395	115,497	254,533
	6 mos.	1,258	6,816,796	2,542,178	10,096,138	1,756,116	2,826,028	431,165	5,046,264	347,336	10,441,088	103.41	—344,950	—653,410	—362,262	1,211,078
Nevada Northern	June	164	7,677	5,084	14,446	10,102	4,182	499	7,319	2,635	24,740	171.26	—10,294	—20,071	—18,728	60,559
	6 mos.	164	145,264	37,609	207,743	69,607	42,991	3,667	93,183	20,841	230,538	110.98	—22,795	—81,692	—66,477	262,276
Newburgh & South Shore	June	7	.....	.....	99,775	16,582	21,501	.....	41,959	3,957	83,998	84.19	15,778	5,584	6,428	—21,774
	6 mos.	7	.....	.....	648,942	74,441	157,288	.....	338,086	27,375	597,189	92.03	51,754	—6,245	11,925	—198,591
New Orleans Great Northern	June	274	164,164	45,975	217,405	35,921	46,946	4,507	96,192	10,084	194,077	89.27	23,328	7,257	—4,119	17,790
	6 mos.	274	952,376	253,909	1,260,648	207,051	222,677	33,228	552,940	59,688	1,078,222	85.53	182,427	88,638	80,629	115,892
New York Central	June	6,078	15,610,220	8,679,053	27,866,455	2,930,767	6,045,558	327,239	10,313,494	812,304	21,061,694	75.58	5,804,761	5,116,497	5,674,643	—6,923,353
	6 mos.	6,076	94,749,442	45,293,543	157,526,612	17,375,729	37,042,368	1,976,876	67,546,979	5,012,065	131,331,369	83.37	26,195,243	16,322,375	17,204,164	—3,926,733
Cincinnati Northern	June	244	338,560	18,524	368,045	48,978	53,580	4,137	84,448	7,346	198,489	53.93	169,556	151,019	145,785	—22,815
	6 mos.	245	1,581,816	111,391	1,752,663	266,746	336,476	32,406	661,094	45,066	1,341,521	76.54	411,142	319,538	288,745	61,983
Cleve., Cin., Chic. & St. Louis	June	2,410	4,831,905	1,572,113	6,942,887	892,181	1,738,765	92,107	2,840,687	164,296	5,787,438	83.36	1,155,449	802,935	751,999	—577,704
	6 mos.	2,417	27,948,914	8,587,401	39,593,766	5,228,025	8,602,434	678,312	18,064,076	1,016,518	33,909,312	85.64	5,684,454	3,751,780	2,696,203	4,042,805
Indiana Harbor Belt	June	120	.....	.....	722,324	50,705	148,405	3,514	296,863	28,765	528,252	73.13	194,072	138,073	76,193	—579,250
	6 mos.	120	.....	.....	4,402,755	601,199	868,843	23,442	2,151,882	162,091	3,807,597	86.48	595,158	454,541	—88,600	—1,746,238
Kaawwha & Michigan	June	176	384,812	58,762	458,242	88,491	138,349	3,150	146,186	11,426	387,582	84.58	70,661	38,345	53,926	—73,820
	6 mos.	176	1,837,998	360,237	2,280,863	427,286	931,092	23,691	861,690	65,597	2,309,332	101.25	—28,468	—239,065	50,248	79,413
Lake Erie & Western	June	738	688,372	45,188	774,518	141,648	183,574	17,715	430,874	30,086	803,896	103.79	—29,378	—76,279	—86,853	—371,184
	6 mos.	738	3,882,482	357,754	4,454,359	747,125	1,220,502	113,826	2,146,609	171,787	4,399,029	98.76	55,330	—245,878	—264,336	—207,277
Michigan Central	June	1,865	3,980,574	1,841,969	6,331,524	741,538	1,147,014	97,478	2,420,349	151,539	4,633,606	73.18	1,697,919	1,481,844	1,459,699	—793,062
	6 mos.	1,865	21,455,102	9,871,293	34,484,225	4,270,097	6,764,863	593,737	15,306,656	934,346	28,298,185	82.06	6,186,039	4,840,483	4,809,464	1,000,186
Pittsburgh & Lake Erie	June	224	1,299,454	234,214	1,639,711	255,470	419,370	18,390	668,602	67,823	1,430,927	87.27	208,784	24,002	253,689	—593,223
	6 mos.	224	9,833,090	1,568,312	12,360,145	1,989,278	3,497,384	125,235	5,132,482	453,914	11,206,483	90.67	1,153,661	—116,671	1,289,314	—997,553
Toledo & Ohio Central	June	503	799,497	76,756	922,950	227,241	153,694	9,590	344,438	26,925	765,250	82.91	157,700	102,915	131,316	—151,973
	6 mos.	503	4,335,609	458,919	4,994,529	882,066	1,133,639	65,642	2,171,840	176,237	4,445,645	89.01	548,884	216,344	425,349	—18,598
New York, Chicago & St. Louis	June	574	2,034,639	133,629	2,209,246	286,191	450,572	53,267	861,919	74,842	1,731,882	78.39	477,364	380,973	343,490	309,689
	6 mos.	574	12,206,873	670,922	13,120,307	1,313,687	2,699,997	331,038	5,634,542	443,858	10,449,676	79.65	2,670,631	2,078,159	2,016,933	2,113,018
N. Y., New Haven & Hartford	June	1,986	4,710,982	4,156,467	9,772,686	1,662,614	2,392,220	58,655	4,530,515	334,079	9,147,042	93.60	625,644	229,093	—83,396	427,033
	6 mos.	1,986	24,977,090	24,504,094	55,055,001	8,184,432	14,173,544	367,405	29,390,025	2,150,827	55,361,103	100.56	—306,102	—2,694,260	—4,736,742	—4,522,697
Central New England	June	301	640,872	20,925	684,374	135,966	108,135	3,827	236,410	14,122	498,460	72.83	185,914	164,531	125,404	—149,167
	6 mos.	301	3,794,353	151,916	4,109,667	610,295	620,021	23,853	1,663,860	90,939	3,009,372	73.23	1,100,295	964,617	532,969	—1,655,577
New York, Ontario & Western	June	569	824,183	323,417	1,323,626	187,551	336,999	15,079	517,854	35,127	1,092,610	82.55	231,016	195,516	164,075	80,508
	6 mos.	569	4,435,255	1,122,802	6,479,855	833,296	1,760,839	87,531	3,087,917	206,079	5,975,662	92.22	504,194	290,914	197,603	—486,380
Norfolk & Western	June	2,220	5,904,489	880,716	7,050,016	1,119,622	1,639,859	75,036	2,675,380	159,122	5,675,366	80.50	1,374,652	984,375	1,247,706	—2,040,741
	6 mos.	2,220	32,642,535	4,973,336	39,191,071	5,796,416	9,842,831	437,368	16,642,858	957,349	33,768,957	86.16	5,422,115	3,078,770	4,367,386	435,040
Norfolk Southern	June	942	528,974	133,118	704,163	111,478	114,158	23,803	311,120	32,523	593,561	84.29	110,602	77,922	72,943	—27,446
	6 mos.	942	2,929,212	862,309	3,931,407	628,356	611,120	136,768	1,931,776	199,890	3,509,929	89.28	421,478	227,334	162,190	—132,537
Northern Pacific	June	6,655	5,097,490	1,609,312	7,408,685	2,268,677	1,861,662	127,734	3,005,833	239,103	7,652,181	103.29	—243,496	—909,681	—624,329	397,872
	6 mos.	6,655	28,050,466	8,314,853	40,427,221	8,051,256	10,168,234	725,809	18,368,663	1,533,443	39,417,468	97.50	1,009,753	—3,328,665	—1,835,666	5,623,875
Northwestern Pacific	June	534	436,935	300,128	834,554	128,999	78,026	6,985	306,722	16,861	539,594	64.66	294,960	264,402	241,783	159,040
	6 mos.	534	1,892,778	1,337,569	3,690,774	742,671	496,849	39,239	1,635,083	104,453	3,032,042	82.15	658,732	475,391	440,324	398,298
Pennsylvania	June	7,323	29,148,729	11,010,534	43,268,215	5,761,450	9,941,078	402,470	17,198,676	1,213,673	35,215,594	81.39	8,052,621	6,286,775	5,020,549	—3,911,901
	6 mos.	7,323	162,452,234	65,414,182	248,584,923	29,480,033	67,257,822	2,749,578	111,283,258	7,002,067	222,046,705	89.32	26,538,218	16,076,725	11,391,396	—34,856,002
Balti., Chesapeake & Atlantic	June	87	112,672	40,662	156,935	16,398	41,389	936	89,783	4,666	153,173	97.60	3,763	—41	2,365	—40,550
	6 mos.	87	520,307	182,150	719,259	88,555	221,756	8,741	459,042	24,053	802,146	111.52	—82,888	—105,699	—107,921	—206,959
Cin., Lebanon & Northern	June	76	82,500	8,135	94,519	19,918	13,957	2,032	59,018	3,620	98,550	104.27	—4,031	—12,694	—12,957	—22,271
	6 mos.	76	458,800	49,906	530,881	101,479	145,481	10,580	359,372	19,203	636,093	119.82	—105,212	—157,184	—164,167	—155,816
Cumberland Val. & Martinsburg	June	33	140,000	5,740	147,897	9,816	17,374	666	35,565	2,420	65,841	44.52	82,056	77,380	73,090	—11,761
	6 mos.	33	677,300	39,374	732,958	64,088	133,367	4,263	246,467	12,722	460,907	62.88	272,051	253,495	220,872	—79,008

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1921—CONTINUED

Name of road.		Average mileage operated during period.	Operating revenues			Operating expenses						Operating ratio.	Net from railway operations.	Operating income (or loss).	Net after rentals	Net after rentals 1920
						Maintenance of										
			Freight.	Passenger.	Total (inc. misc.)	Way and structure.	Equipment.	Traffic.	Transportation.	General.	Total.					
Grand Rapids & Indiana	June	575	$378,000	$192,106	$617,668	$79,705	$159,020	$15,883	$374,771	$26,471	$656,047	106.21	—$38,379	—$74,182	—$96,579	—$34,827
	6 mos.	575	2,736,190	1,036,007	4,086,038	423,659	1,018,359	86,367	2,336,050	151,661	4,019,225	98.36	66,813	—148,014	—281,092	—368,680
Long Island	June	398	696,013	1,878,813	2,792,777	341,944	479,165	23,288	1,191,695	59,061	2,113,699	75.68	679,078	545,447	500,818	469,497
	6 mos.	398	3,682,543	7,924,900	12,767,134	1,743,799	2,718,651	108,841	7,024,946	388,515	12,099,211	94.77	667,924	—82,524	—270,230	—1,290,922
Maryland, Dela. & Va	June	82	78,063	31,842	113,033	12,336	33,219	588	79,898	2,909	128,950	114.08	—15,917	—18,017	—24,462	—30,348
	6 mos.	82	387,339	132,696	539,665	71,822	117,134	5,910	387,836	15,974	558,676	110.93	—59,010	—71,613	—80,807	—215,853
N. Y., Phila. & Norfolk	June	122	456,300	109,679	621,100	64,341	155,394	6,918	374,451	16,235	630,666	101.54	—9,566	—33,394	—53,435	—105,109
	6 mos.	122	2,215,300	602,363	3,072,357	320,673	867,097	51,073	2,001,363	87,749	3,404,671	110.82	—332,315	—475,353	—560,041	—565,019
Pitts., Cin., Chic. & St. Louis	June	2,383	4,844,300	1,984,348	7,942,514	1,350,100	2,019,024	147,739	3,291,507	233,555	7,111,915	89.54	830,600	421,351	183,687	—987,498
	6 mos.	2,383	31,387,400	11,549,255	48,177,641	6,460,559	14,505,026	757,389	22,843,817	1,455,242	46,433,467	96.38	1,744,174	—709,142	—2,669,535	—2,673,569
West Jersey & Seashore	June	359	332,671	710,676	1,105,932	165,505	209,424	13,056	554,416	28,555	979,971	88.61	125,961	65,373	47,409	—112,759
	6 mos.	359	1,655,882	3,479,332	5,543,978	1,001,347	1,194,121	78,033	3,264,761	154,799	5,747,118	103.66	—203,140	—545,831	—635,913	—1,340,383
Peoria & Pekin Union	June	19	16,677	2,374	125,120	10,860	31,958	34	60,192	7,408	110,452	88.28	14,669	3,769	20,337	—58,681
	6 mos.	19	86,643	15,517	830,612	110,706	193,411	776	497,067	37,476	839,436	101.06	—8,824	—84,872	34,084	—81,034
Pere Marquette	June	2,227	2,374,994	509,489	3,141,105	381,510	685,118	43,187	1,310,454	115,597	2,548,250	81.13	592,855	457,218	427,425	223,711
	6 mos.	2,236	12,870,823	2,762,165	16,943,667	2,125,048	3,672,234	290,124	8,015,038	675,031	14,832,847	87.49	2,120,820	1,395,266	1,132,040	—988,568
Philadelphia & Reading	June	1,126	6,007,197	935,373	7,215,001	1,169,349	1,859,794	55,570	2,800,004	155,237	6,061,098	84.01	1,153,904	1,011,737	829,216	—298,375
	6 mos.	1,126	35,040,146	5,590,926	42,321,725	4,979,978	12,090,502	347,321	18,442,485	1,027,017	37,031,298	114.57	5,290,428	3,939,246	2,698,260	—424,598
Atlantic City	June	177	113,370	329,904	448,788	54,685	63,245	3,792	223,031	5,969	350,823	78.17	97,965	78,431	42,600	4,120
	6 mos.	177	637,328	1,191,676	1,865,233	359,736	313,553	17,908	1,211,932	13,346	1,917,088	102.78	—51,855	—166,578	—323,215	—157,443
Perkiomen	June	41	91,740	9,993	105,195	16,382	4,359	18	39,584	400	60,768	57.77	44,428	41,283	35,552	21,900
	6 mos.	41	565,923	55,405	646,298	55,895	24,474	89	230,736	2,732	314,041	48.59	332,256	313,392	282,244	187,187
Port Reading	June	21	101,232	.....	157,734	31,791	4,615	18	67,436	3,670	107,513	68.16	50,221	35,816	—14,308	—121,853
	6 mos.	21	866,273	.....	1,206,703	117,863	41,064	108	463,256	8,676	630,948	52.29	575,755	494,292	122,381	—395,765
Pittsburg & Shawmut	June	102	75,905	4,021	81,871	28,441	39,233	1,321	31,364	7,602	107,962	131.87	—26,091	—26,238	—12,731	34,058
	6 mos.	102	568,929	38,743	617,230	152,561	263,225	12,559	243,533	44,625	716,502	116.08	—99,273	—100,205	67,535	293,324
Pittsburg & West Virginia	June	63	129,173	12,075	174,199	39,769	57,658	1,485	55,769	8,993	173,769	99.75	430	—21,111	—25,292	—4,055
	6 mos.	63	681,868	74,199	950,071	210,077	320,706	11,140	380,173	57,020	1,047,388	110.24	—97,316	—217,100	—196,295	—215,189
Pittsburg, Shawmut, Northern	June	210	87,938	5,441	96,683	28,345	39,027	1,753	44,336	10,245	123,711	127.96	—27,028	—29,270	—28,324	—37
	6 mos.	210	539,063	45,249	596,212	165,035	309,587	9,321	295,395	44,247	823,613	138.14	—227,401	—240,843	—125,434	—24,762
Quincy, Omaha & Kansas City	June	252	77,201	23,942	109,145	37,664	14,907	983	54,908	6,124	114,495	104.90	—5,350	—9,834	—13,473	—35,858
	6 mos.	253	425,301	157,888	628,264	181,259	98,755	5,420	375,762	18,126	677,721	107.87	—49,457	—74,823	—96,613	—198,829
Richmond, Fred. & Potomac	June	117	448,251	244,259	792,255	130,009	148,048	8,850	350,821	30,481	688,948	86.96	103,307	68,064	40,820	106,115
	6 mos.	117	2,825,382	1,982,400	5,397,385	881,563	907,847	51,655	2,311,143	177,880	4,442,166	82.30	955,219	750,988	485,307	1,241,256
Rutland	June	415	245,375	120,483	464,751	87,863	92,831	8,965	216,963	17,333	425,797	91.62	38,955	14,875	22,948	—191,103
	6 mos.	415	1,611,076	711,073	2,794,642	557,846	654,369	51,656	1,382,771	91,738	2,749,721	98.39	44,921	—98,291	—271	—384,528
St. Louis-San Francisco	June	4,760	4,325,231	1,768,862	6,406,079	774,678	986,730	91,857	2,682,079	200,178	4,753,959	74.21	1,652,121	1,350,421	1,355,560	1,404,835
	6 mos.	4,760	27,194,628	10,345,934	39,950,388	4,455,132	7,587,804	520,693	16,707,202	1,310,002	30,374,124	76.03	9,576,263	7,910,898	7,870,357	5,755,388
St. Louis Southwestern	June	968	1,153,443	138,320	1,351,086	153,645	174,161	45,872	381,407	57,419	819,177	60.63	531,909	472,391	432,599	569,978
	6 mos.	968	7,043,095	913,382	8,294,988	970,061	1,408,464	288,558	2,492,729	343,193	5,545,254	65.73	2,749,734	2,435,285	2,238,651	3,299,960
St. Louis Southwestern of Tex.	June	807	446,779	106,132	594,587	166,649	135,809	20,059	329,050	36,119	688,417	115.78	—93,829	—117,979	—114,556	—114,494
	6 mos.	807	2,736,909	600,234	3,613,713	909,374	1,039,202	126,444	2,018,633	224,444	4,322,361	119.61	—708,647	—853,273	—769,808	—1,114,112
San Antonio & Aransas Pass	June	738	405,348	90,567	524,404	100,746	104,300	9,157	238,094	25,781	477,460	91.05	46,944	33,668	36,672	—130,254
	6 mos.	738	2,148,233	494,807	2,813,339	670,991	638,993	61,047	1,590,929	153,849	3,112,222	110.62	—298,883	—379,980	—361,473	—658,469
San Antonio, Uvalde & Gulf	June	317	60,298	23,600	96,956	14,338	16,329	3,243	30,582	6,746	71,239	73.48	25,718	22,756	10,028	—11,594
	6 mos.	317	400,530	149,346	619,498	87,911	100,918	18,706	250,919	40,471	498,926	80.54	120,572	103,303	36,541	—218,183
Seaboard Air Line	June	3,563	2,131,946	680,201	3,056,711	397,459	605,882	106,122	1,694,019	156,134	2,984,746	97.65	71,966	—77,453	—209,544	—1,455,729
	6 mos.	3,563	15,231,765	5,094,634	22,178,212	2,608,102	3,838,830	749,867	11,302,439	921,553	19,659,794	88.64	2,518,417	1,610,430	642,783	—2,288,286
Southern Ry.	June	6,971	6,619,084	2,724,016	10,218,486	1,505,498	1,770,950	214,755	4,566,283	349,470	8,496,543	83.15	1,721,943	1,320,453	1,098,958	—433,477
	6 mos.	6,971	41,003,007	15,724,750	62,416,785	10,336,767	12,139,912	1,276,339	29,418,450	2,091,947	55,817,879	89.43	6,598,906	4,464,773	2,143,947	7,859,561
Alabama Great Southern	June	313	543,278	171,546	753,124	108,008	141,232	19,900	320,818	25,886	623,363	82.77	129,762	100,390	114,354	255,890
	6 mos.	313	3,406,603	1,005,516	4,704,441	724,045	1,017,048	131,398	2,254,944	145,067	4,314,516	91.71	389,926	232,585	244,666	1,140,957
Cin., New Orleans & Tex. Pac.	June	338	1,037,458	283,311	1,400,328	185,305	272,820	26,570	557,337	41,353	1,091,839	77.97	308,489	257,086	266,655	185,443
	6 mos.	338	6,478,325	1,808,037	8,827,258	1,212,668	2,189,084	175,176	3,862,202	250,680	7,761,289	87.92	1,065,969	769,354	776,913	1,875,791
Georgia, Southern & Florida	June	402	233,841	68,939	338,727	82,231	66,799	9,028	217,595	13,140	390,293	115.22	—51,566	—68,655	—90,390	—103,487
	6 mos.	402	1,498,889	525,354	2,228,122	515,214	501,601	52,800	1,320,276	77,689	2,485,382	111.56	—257,261	—360,306	—506,217	194,892
New Orleans & Northeastern	June	207	344,976	87,265	474,810	82,451	85,805	11,218	248,094	17,955	448,040	94.36	26,770	—25,922	—26,519	—48,257
	6 mos.	207	2,445,493	546,541	3,261,386	549,551	637,851	74,199	1,648,091	101,513	3,037,222	93.13	224,164	—34,310	—164,635	328,216
Northern Alabama	June	110	49,826	11,537	63,714	22,531	3,675	2,018	21,523	3,619	53,366	83.71	10,348	6,535	—1,207	—37,434
	6 mos.	110	346,551	81,309	444,844	105,583	29,864	11,605	229,299	20,705	397,055	89.26	47,789	23,460	—54,518	—27,885
Southern Pacific	June	7,110	11,218,897	4,216,700	17,131,780	2,402,405	3,030,694	219,828	6,142,109	551,845	12,649,366	73.84	4,482,413	3,400,607	3,127,715	3,624,331
	6 mos.	7,110	56,872,252	25,285,536	91,967,339	12,986,484	16,574,965	1,312,183	36,484,047	2,857,309	71,977,186	78.26	19,990,153	14,333,640	13,347,209	11,991,421
Arizona Eastern	June	382	129,309	32,242	180,729	48,928	39,294	3,784	77,144	20,326	190,877	105.62	—10,148	—32,072	—36,948	79,473
	6 mos.	382	1,206,733	256,360	1,586,998	293,061	273,391	23,105	601,216	133,015	1,347,878	84.93	239,119	82,701	17,937	301,515

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1921—CONTINUED

Name of road.		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structure.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operations.	Operating income (or loss).	Net after rentals.	Net after rentals 1920.
Atlantic S. S. Lines	June	.....	$671,864	$52,317	$761,680	$14,465	$171,335	$16,531	$499,660	$26,418	$728,408	95.63	$33,271	$21,748	$21,748	—$320,665
	6 mos.	.....	4,510,272	367,059	5,149,520	85,322	1,089,085	104,763	3,429,355	167,687	4,876,211	132.84	273,309	204,139	209,618	—2,515,773
Galv., Harrisburg & S. Ant.	June	1,380	1,353,676	453,340	1,932,907	425,537	364,899	41,921	744,173	83,655	1,658,665	85.81	274,242	231,516	177,724	—395,340
	6 mos.	1,380	9,186,770	2,748,861	12,831,852	2,316,990	2,730,736	294,570	5,174,780	500,076	11,093,162	86.45	1,738,690	1,479,169	830,195	—1,206,165
Houston & Tex. Central	June	932	752,885	266,564	1,674,835	313,957	143,458	20,342	425,763	35,647	938,084	87.27	136,751	92,907	69,789	—90,563
	6 mos.	932	4,400,021	1,365,994	6,071,872	1,672,939	1,035,553	123,827	2,570,603	204,915	5,603,187	92.28	468,684	204,230	—36,074	—234,534
Houston, East & West Texas	June	191	178,933	52,608	240,650	68,657	25,285	3,227	78,325	7,702	193,146	76.11	57,509	49,565	40,164	—48,933
	6 mos.	191	1,004,843	285,827	1,353,630	365,872	195,609	21,153	621,805	44,939	1,249,159	92.28	104,471	56,488	—24,860	—276,826
Louisiana Western	June	200	176,579	99,103	298,168	58,187	66,009	10,306	109,483	16,158	264,673	88.77	33,495	8,226	4,013	96,813
	6 mos.	200	1,378,967	583,118	2,097,289	333,247	469,538	68,439	709,115	99,705	1,706,132	81.35	391,156	225,854	210,509	507,067
Morgan's La. & T. R. R. & S. S. C.	June	400	360,976	168,948	569,585	208,348	161,226	15,280	293,433	29,892	714,035	125.36	—144,450	—185,851	—215,274	183,179
	6 mos.	400	3,038,024	994,224	4,295,347	1,038,762	987,664	105,704	1,984,860	185,981	4,334,801	100.92	—39,453	—316,982	—522,814	670,219
Texas & New Orleans	June	475	545,037	163,172	749,643	182,420	182,544	10,232	279,938	27,195	637,568	85.02	62,074	42,063	17,918	—135,268
	6 mos.	475	3,100,857	929,736	4,253,797	971,709	1,260,323	72,055	1,979,073	152,195	4,472,843	105.15	—219,046	—340,869	—546,760	—253,593
Spokane International	June	165	84,149	13,159	101,541	26,579	7,038	3,076	37,275	6,195	80,903	79.68	20,638	13,011	5,881	43,769
	6 mos.	165	513,562	95,406	633,117	123,787	47,743	19,058	226,149	37,251	457,966	72.34	175,151	131,786	95,399	215,417
Spokane, Portland & Seattle	June	549	430,780	177,418	679,149	93,936	81,646	8,547	228,470	20,804	444,610	65.47	234,539	139,523	120,447	133,084
	6 mos.	549	2,332,920	879,985	3,530,877	436,310	542,218	51,113	1,352,377	136,522	2,569,347	72.77	961,531	454,466	420,814	598.627
Tennessee Central	June	292	134,258*	48,528	196,047	45,523	16,657	4,985	105,840	11,576	184,581	94.15	11,466	6,847	—10,836	—62,787
	6 mos.	292	818,061	291,946	1,178,396	263,699	243,794	28,819	675,350	68,789	1,280,404	108.66	—102,008	—130,927	—249,432	—141,369
Term. R. R. Assn. of St. Louis	June	36	.....	.....	346,118	88,823	43,725	1,357	130,637	12,139	280,323	80.99	65,795	12,982	123,734	161,665
	6 mos.	36	.....	—8	2,176,331	505,276	212,079	6,198	839,343	55,255	1,640,789	75.39	535,543	248,669	920,743	838,486
East St. Louis Connecting	June	3	.....	.....	125,885	20,613	14,378	464	57,907	3,111	96,473	76.64	29,412	26,747	15,970	—31,184
	6 mos.	3	.....	.....	808,487	125,031	37,386	2,170	399,468	21,581	585,636	72.44	222,851	205,148	132,283	—244,890
St. L. Merchants' Bridge Term.	June	9	.....	.....	274,956	35,785	32,997	1,356	159,486	7,033	236,656	86.07	38,299	21,672	40,830	—78,408
	6 mos.	9	.....	.....	1,742,584	284,334	153,255	6,126	1,038,677	42,265	1,524,657	87.49	217,927	129,419	223,042	—283,510
St. Louis Transfer Ry.	June	6	.....	.....	88,057	9,254	8,064	272	32,727	1,721	52,038	59.10	36,018	35,653	30,784	15,923
	6 mos.	6	.....	.....	566,072	62,078	23,176	1,276	228,833	11,850	327,212	57.80	238,260	236,519	208,458	113,364
Texas & Pacific Ry.	June	1,952	1,768,703	738,738	2,688,122	461,166	481,894	49,734	1,054,919	101,258	2,178,149	81.03	509,973	381,597	276,786	392,106
	6 mos.	1,949	12,112,366	4,522,396	17,840,491	3,225,879	3,752,724	322,811	7,496,839	610,955	15,589,555	87.38	2,250,936	1,481,955	819,278	230,577
Toledo, Peoria & Western	June	247	59,647	41,602	110,619	34,851	35,323	2,292	79,309	8,175	159,861	144.52	—49,242	—59,432	—60,582	16,198
	6 mos.	247	453,126	293,716	867,315	202,649	282,892	19,635	517,661	50,200	1,074,244	133.06	—266,929	—327,119	—298,300	66,639
Toledo, St. Louis & Western	June	454	679,449	29,126	740,353	98,541	121,385	19,834	268,012	14,563	522,335	70.55	218,018	181,989	156,572	—55,427
	6 mos.	454	3,991,974	176,098	4,357,888	697,072	1,014,836	122,773	1,705,299	97,997	3,637,716	83.47	720,172	513,624	381,106	479,180
Trinity & Brazos Valley	June	368	202,754	18,789	228,571	47,988	39,826	2,623	86,776	10,641	187,745	82.14	40,827	33,627	13,557	—18,376
	6 mos.	368	1,145,755	106,849	1,297,283	294,949	303,853	18,148	574,723	61,793	1,252,884	96.58	44,399	2,559	—98,611	—373,526
Ulster & Delaware	June	128	85,070	48,616	164,408	26,652	31,387	5,165	89,943	8,656	162,402	98.17	2,006	—5,880	—12,181	—25,225
	6 mos.	128	372,676	158,554	684,579	108,797	145,337	18,122	425,221	50,966	752,619	109.88	—68,040	—110,443	—133,591	—156,158
Union R. R. of Pa.	June	45	.....	.....	859,256	59,014	189,158	227	342,477	7,936	8,812	69.69	260,443	251,277	330,624	180,548
	6 mos.	45	.....	.....	4,985,184	370,778	1,391,435	1,639	2,595,220	48,953	4 3,026	88.42	577,159	514,407	847,499	138,698
Union Pacific	June	3,614	5,947,426	1,948,056	8,785,176	1,065,713	1,658,941	167,544	2,537,534	287,415	5,903,042	67.19	2,882,134	2,349,779	2,308,510	739,871
	6 mos.	3,614	34,467,227	9,569,134	48,705,977	4,864,534	10,461,022	884,732	15,695,475	1,978,807	34,929,280	71.71	13,776,697	10,749,152	10,153,685	13,010,008
Oregon Short Line	June	2,359	1,812,547	588,108	2,621,958	483,374	548,057	43,149	872,290	103,384	2,106,810	80.35	515,148	251,165	223,477	522,592
	6 mos.	2,359	11,235,840	3,033,939	15,652,677	2,585,150	3,369,600	263,680	5,638,941	762,211	12,945,936	82.71	2,706,742	1,150,662	980,805	5,337,166
Oregon Wash. R. R. & Nav.	June	2,223	1,637,396	600,915	2,447,510	520,496	432,032	60,767	909,016	125,581	2,070,715	84.61	376,795	195,847	109,323	141,150
	6 mos.	2,223	9,204,471	3,100,781	13,489,989	2,851,741	2,478,755	368,613	5,932,075	819,493	12,654,565	93.81	835,424	—252,116	—742,508	1,567,395
St. Joseph & Grand Isl.	June	258	199,087	28,667	254,390	75,043	46,483	2,649	118,893	13,869	256,937	101.00	—2,547	—15,198	—43,004	—112,862
	6 mos.	258	1,231,153	181,678	1,510,123	260,000	296,106	16,019	738,046	91,257	1,401,350	92.80	108,774	31,662	—71,258	—225,920
Virginian	June	526	1,777,144	83,406	2,044,240	221,736	322,733	10,459	531,571	31,708	1,110,873	55.43	893,368	789,253	791,512	392,726
	6 mos.	526	8,454,988	462,463	9,596,649	1,163,868	1,942,917	63,742	2,886,650	189,871	6,241,063	65.03	3,355,586	2,770,347	2,916,303	1,561,844
Wabash	June	2,472	3,556,215	913,511	4,738,969	894,187	980,216	113,898	2,108,900	176,751	4,306,601	90.88	432,368	281,326	3,988	—1,345,263
	6 mos.	2,472	22,270,949	4,944,981	28,832,268	4,602,911	5,967,906	679,605	13,194,629	1,090,455	25,729,409	89.21	3,111,859	2,236,710	890,177	—5,208,477
Western Maryland	June	797	1,282,935	93,231	1,451,226	177,349	327,244	30,578	524,636	50,449	1,127,816	77.71	323,410	263,410	249,904	—521,931
	6 mos.	797	8,939,209	558,311	9,133,335	1,117,068	2,258,485	165,181	3,581,770	314 404	7,569,725	82.88	1,563,609	1,213,609	1,464,493	—184,863
Western Pacific	June	1,011	680,949	233,389	963,152	259.546	213,094	32,986	337,659	39,430	902,567	93.71	60,586	—19,229	12,500	442,716
	6 mos.	1,011	4,048,050	1,186,538	5,555,690	1,032,820	1,193,475	192,066	2,291,699	262,357	5,091,263	91.64	464,427	19,424	327,165	1,343,146
Wheeling & Lake Erie	June	511	1,301,726	74,085	1,484,823	194,386	279,846	13,596	489,779	37,374	1,018,665	68.61	466,157	390,628	359,301	27,753
	6 mos.	511	5,772,149	490,100	6,748,925	917,958	1,568,707	86,077	2,865,750	246,282	5,709,706	84.60	1,039,219	583,475	450,223	—122,237

**Corrected report.

Traffic News

The Missouri Pacific, the Chicago & Alton and the Wabash have announced round trip excursion rates between Kansas City and St. Louis, Mo., on August 13 of approximately the one way fare.

The Great Northern has announced that new commodity rates on ore and concentrates from Great Northern points to the Bunker Hill smelter at Bradley, Idaho, will become effective August 19.

The St. Louis-San Francisco has opened an office in the United Fruit Company building at New Orleans, La., in charge of F. A. Edmondson, who has been appointed general agent of the freight department.

Repeal of Section 15-a of the transportation act, which prescribes rule for rate-making, was urged before the Commission on Agricultural Inquiry this week by S. H. Cowan, counsel for the American National Livestock Association. He did not "challenge the integrity" of the commissioners but "challenged their judgment" in valuation decisions. If Congress would enact legislation putting railroad rates back where they were when the lines were taken over, and valuation figures were disregarded, the railroads would have a large business.

The Adriatic Mining Company and more than eighty other independent operators in the Lake Superior iron district charged before Examiner Hosmer of the Interstate Commerce Commission, Chicago, on January 24, that the United States Steel Corporation is benefiting by discriminatory rates. The petition, upon which hearings have been started, was filed against the Chicago & North Western, the Chicago, Milwaukee & St. Paul, the Great Northern, the Duluth & Iron Range, the Duluth, Missabe & Northern and four other railways serving the northern iron mining district.

Freight rates on grain, grain products and grain by-products from Chicago and points taking Chicago rates, to north Atlantic seaboard ports for export, are to be reduced, temporarily, 7½ cents per 100 lb., as a result of conferences held at Chicago, last week, between the railroads and shippers' representatives. Corresponding reductions will be made in the rates from points in Central Freight Association territory east of Illinois. Authority will be sought to make the reduced rates effective on 10 days' notice. The reduced rates are to be in force only until October 1.

Transferring Mail at New York from Ocean Liner to New York Central's Harbor Steamer

To expedite the delivery of foreign mails inbound ocean steamers are now met by a New York Central harbor boat, thus providing for delivery of mails before ocean vessel is released from quarantine.

Commission and Court News

Interstate Commerce Commission

The Commission has reopened the railway mail pay proceeding for reexamination and further hearing of the facts and circumstances surrounding the transportation of the mail and the services performed by several "Short Line" carriers in the West who applied for reopening of the case.

The commission has further suspended until September 5, the operation of certain rates on lumber and other forest products from California and Oregon to various points in Minnesota, via the Chicago, St. Paul, Minneapolis & Omaha and the Great Northern, which rates would result in increases varying from 4½ to 9 cents per 100 lb.

Proposed withdrawal of the Chicago, St. Paul, Minneapolis & Omaha and the Great Northern from participation in joint rates on lumber and forest products, in carloads, from points in California and Oregon to Nebraska. Iowa, Minnesota and Wisconsin have been found not justified and the suspended schedules were ordered canceled on or before September 4. Fourth Section relief was denied.

Court News

Practice as to Demurrage Acquiesced in by Shipper Equivalent to Agreement, and Binding

In an action by the Minneapolis, St. Paul & Sault Ste. Marie for demurrage on a car of wheat destined to Minneapolis, it appeared that, while originally it was the practice to observe the tariff rule literally by giving notice to the consignee after arrival of cars in the city, a serious congestion at the terminal about 1906 caused a change, and with the concurrence of the state commission, the Minneapolis Chamber of Commerce and the Northern railroads, the practice was established of stopping the cars of wheat at outlying stations and having samples taken and sent in advance to Minneapolis by passenger trains, manifests being forwarded to the consignee in place of the written notice of arrival. On July 7, 1917, the defendant notified the plaintiff in writing it would no longer observe the practice. The demurrage sued for in this case arose prior to the written notice given by the defendant. The defendant claimed that although he had on previous occasions paid demurrage, that had been on cars of whose actual arrival he had learned personally. The Circuit Court of Appeals, Eighth Circuit, rejects the defendant's contention. "Prior to the letter of July 7, 1917, the road could not lawfully have made defendant an exception to the practice so long as it was willing to receive and receipt for the manifests, and a corresponding disability rested on the defendant. The demurrage rule recognizes the validity of agreements in lieu of written notice. The Interstate Commerce Commission said that the practice existing at Minneapolis as it had for many years 'for the mutual benefit of consignees and carriers, and generally acquiesced in by the former, is tantamount to an agreement.'—Minneapolis T. Assn. v. C. B. & Q., 49 I. C. C. 308, 315. A similar practice was upheld in Berwind-White Co. v. Chicago & Erie, 235 U. S. 371, 35 Sup. Ct. 131, 59 L. Ed. 275. It was held that, although cars billed for reconsignment may not have actually reached the point named as destination, demurrage may attach for the time held after reaching the point convenient to the belt line for transfer, where, under usual practice for many years, cars so billed were held for reconsignment. The court said that the contention that the cars had not reached destination as provided in the demurrage rules was frivolous." Judgment for the defendant was reversed and a new trial ordered.—Minneapolis, St. P. & S. S. M. v. Van Dusen Harrington Co., 272 Fed. 255.

THE RAILROAD COMMISSION of California has given tentative permission to the Southern Pacific to withdraw 18 passenger trains from service in various parts of California. The Commission reserved the right to require the restoration of any part of this service should complaints from patrons be made.

Foreign Railway News

Spanish Manufacturers in Market for Car Axles

A combination of Spanish manufacturers which is in the market for a quantity of car axles has supplied Commercial Attaché Cunningham, Madrid, with blue prints of the material they require. These plans have been sent to the New York office of the Bureau of Foreign and Domestic Commerce where they are open for inspection to American manufacturers interested.

Electrification of the Victorian Railways

It is reported in the Times (London) Trade Supplement that the Victorian Railways Commissioners (Australia) are about to convert a further 100½ miles of their lines from steam to electric traction and that the work is to be completed by the end of February, 1923. In addition to this electrification, which covers the passenger carrying routes, a number of lines exclusively used for freight traffic are to be converted and the electric system extended over several of the busier sections of the country lines. This work will entail the overhead wiring of considerably over 100 miles of track, the erection of a number of sub-stations additional to those already in use, the replacement of the existing signaling equipment, and the construction of several workshops fully equipped with all types of machine tools. It is proposed that Australian materials shall be used to the fullest extent possible under the local conditions.

Orient to Resume Construction of Mexican Line

Formal notice was recently conveyed to President Alvaro Obregon by D. J. Haff of Kansas City, general counsel of the Kansas City, Mexico & Orient Railroad, according to reports from Monterey, Mexico, that the stockholders of that company have voted to resume construction of the main line that will close the gap between Sanchez, state of Chihuahua, and Fuerte, state of Sinaloa, a distance of approximately two hundred miles. The work will be started as soon as the construction forces can be organized, according to Juan F. Trevino, superintendent of the Chihuahua division of the road. With the filling in of this gap the main line of the Kansas City, Mexico & Orient will have been finished from a point about fifty miles south of Presidio, Texas, on the Rio Grande, to the port of Topolobampo, on the Pacific. It is planned to resume the construction of the main line from Alpine, Texas, to a connection with the existing northern terminus of the Mexico division in the near future, it is officially stated. The cost of the construction of the two hundred miles of road between Sanchez and Fuerte will be approximately $10,000,000, United States money, Mr. Haff was said to have informed President Obregon.

International Commerce Chamber Urges Freedom of Transportation

The International Chamber of Commerce at its meeting in London the latter part of June adopted resolutions urging the free movement of freight trains over international borders and the construction of the railway tunnel under English Channel. The resolution reads in part: "The chamber approves the construction of a channel tunnel between the British Isles and the continent of Europe and requests the appropriate national committees to bring this conclusion to the notice of the governments concerned. The chamber also approves the inauguration of regular services of sea-train ferries across the English channel, and across other bodies of water where commercially feasible, and they request the national committees of countries interested in the establishment of such ferries to take promptly practical steps for their establishment and to offer the aid of the chamber in regard thereto.

"The chamber requests that the railway systems take joint measures with a view to establishing, on great international traffic routes, in a manner similar to that adopted for the conveyance of passengers, connecting services which will ensure rapid transportation of international long distance freight trains, both for express and ordinary goods service. To this end the national committee of countries interested in the respective international traffic routes are requested to take promptly the practical steps to secure the establishment of such routes and to offer the aid of this chamber in any necessary international negotiations. The chamber calls the attention of the railway companies to the importance of the institution of a company for the purpose of providing the public with special rolling stock for such international transportation of goods and for ensuring by proper means of supervision, the security and rapidity of said means of conveyance."

May Exports of Track Materials

Steel rails valued at $1,362,473, track spikes valued at $38,108 and miscellaneous track materials valued at $388,583 were exported during May. All of these figures are much less than similar totals for the preceding month. The largest buyers of rails during the month were Japan, China, Argentina and the Dutch East Indies. The detailed figures, as compiled by the Bureau of Foreign and Domestic Commerce, follow:

	Railroad spikes		Rails of steel		Switches, frogs, splice
Countries	Pounds		Tons		bars, etc.
France	.....	.....	.....	.....	$1,252
Norway	.....	.....	35	$2,800	11,808
Spain	.....	.....	.....	.....	27,926
Switzerland	.....	.....	.....	.....	70
Turkey in Europe	.....	.....	.....	.....	54
England	.....	.....	.....	.....	669
British Honduras	400	$19	.....	.....	.....
Canada	72,834	3,762	704	33,447	17,962
Costa Rica	3,000	146	.....	.....	2,957
Guatemala	2,000	83	.....	.....	146
Honduras	.....	.....	339	20,172	3,867
Nicaragua	10,000	358	.....	.....	.....
Panama	4,200	159	.....	.....	1,391
Salvador	.....	.....	15	900	801
Mexico	50,350	5,050	120	5,048	9,171
Jamaica	.....	.....	.....	.....	560
Trinidad and Tobago	.....	.....	.....	.....	341
Cuba	95,540	5,494	1,487	87,504	22,948
Dominican Republic	7,300	390	.....	.....	1,358
Argentina	125,200	8,536	1,800	117,000	54,443
Chile	.....	.....	.....	.....	1,623
Colombia	8,000	320	6	362	23
Ecuador	.....	.....	.....	.....	906
Dutch Guiana	.....	.....	.....	.....	324
Peru	41,360	1,607	.....	.....	4,488
Uruguay	.....	.....	500	32,465	9,918
Venezuela	1,200	60	.....	.....	19
China	29,120	3,259	6,543	351,355	137
Kwantung, leased territory	.....	2,334	2,008	82,535	38,375
British India	.....	.....	52	2,511	984
Straits Settlements	.....	.....	.....	.....	1,132
Dutch East Indies	.....	.....	2,015	114,830	78,255
Japan	137,110	6,185	5,750	388,613	80,151
Siam	.....	.....	1,329	79,758	.....
Australia	.....	.....	.....	.....	4,005
Philippine Islands	60,000	2,680	538	31,088	7,535
British South Africa	.....	.....	101	4,848	2,619
Portuguese Africa	.....	.....	150	7,237	365
Total	647,614	$38,108	23,492	$1,362,473	$388,583

China Notes

Considerable construction work is going on in small jobs. Projects under construction, planned or recently completed, are shown in the accompanying map by a dotted line. Existing railways are shown by a solid line. The earthwork on the Cheefoo-Weihsien railway in Shantung has been practically completed during the month as a measure of famine relief. Another measure of famine relief is the earthwork on the Tsangchow-Shihchiachuang line, now under way. The western half of this route is nearly finished. Difficulties in land purchase have held up work on the eastern half. The western section was under the direction of the Peking-Hankow line and the eastern section under the Tientsin-Pukow line until about a month ago, when a separate administration was formed for the entire line. The director, Li, was formerly chief engineer of the Peking-Hankow line. On May 1, the section from Fengchen to Suiyuan was opened to traffic. The formal opening will take place June 1, but public goods have been carried on construction trains throughout May. The term Peking-Suiyuan Railway is no longer a misnomer, but may soon become so, for it is intended to continue the line west to Pao Tou Chen. Surveys for additional construction on the Canton-Hankow route

are under way, and tunnel contracts on the westerly portion of the Lung Hai line will be let shortly.

Minister of Communications Ousted

The present conference of the "war-lords" of North China has resulted in the ousting of Yeh Kung-cho as minister of communications. Mr. Yeh took a strong stand against the use of railway revenues for any purpose outside of immediate promotion of railway interests, although he had agreed to the allocation of some $200,000 as an emergency matter, to the payment of the arrears in the salaries of the striking teachers. The premier, however, considered that loyalty to the administration required each department to contribute all available funds to the general purposes of the government. Those familiar with the situation consider that Mr. Yeh has cleverly extricated himself from a very difficult situation. It is well known that the Anfu administration last summer "swept the bin" of all loose cash. Very heavy repayments of mortgage loans fall due this year. The rate of exchange for the repayment of such sums, and also for

A Part of China with Recent and Proposed Railway Construction Shown by Dotted Lines

the payment of interest is very adverse. And on top of it all the railways are showing decreasing revenues for the first time in their history. This is due in part to the effects of the famine, and in part to the commandeering of rolling stock by militarists. For the time being the latter is the principal reason, for it is well known that there is still more grain to be moved than the railways are able to handle under present conditions. On the other hand, during the conference at Tientsin and Peking Chang Tso-lin, Tuchun of Manchuria, has kept from three to five locomotives constantly under steam awaiting his pleasure. This has continued for over a month. Hence it is likely that Mr. Yeh knew just what he was doing when he defied "the powers." He may be expected back in power within a comparatively short time, for he remains as president of Communications University, and in that position has an excellent opportunity for extending his following among the larger element. In the meantime his interests in the Ministry are being safeguarded by the appointment of Dr. C. C. Wang as director of the Railway Department. Americans will remember Dr. Wang as the man who accompanied Mr. Yeh on his trip through our more important cities. Dr. Wang's place on the Chinese Eastern Railway will be taken by C. S. Liu.

A further step in the welding of the Chinese Government lines into a unified system was taken recently in the Third General Traffic Conference, which legislated for a permanent rate and classification committee to be located in the Ministry of Communications. This committee would be charged with the responsibility of studying through traffic conditions with the special purpose of developing business. It will have charge of the editing of tariffs, interpreting doubtful constructions, and of initiating rates on new commodities. In short, it becomes the rate department of the Chinese Government railways except for purely local business.

A persistent rumor states that the Peking-Suiyuan line is trying to float a large loan for the purchase of additional rolling stock. It is more likely that the proceeds of any loan which may be floated will be used for the Pao Tou Chen extension.

Equipment and Supplies

Lehigh Valley Will Have 3,200 Cars Repaired

The Lehigh Valley has awarded contracts for the repair of equipment, as follows:

American Car & Foundry Company	1,000 box cars
Magor Car Corporation	1,000 box cars
Buffalo Steel Car Company	500 steel coal cars
American Car & Foundry Company	500 steel coal cars
Lehigh Structural Steel Company	200 steel coal cars

In making the awards, figures prepared by the Lehigh Valley reveal that these contracts have been let at a saving of over $308,000 to the company, as compared with the cost of making these repairs in its own shops. This saving is made even in the face of the recent reduction in wages and is due to the rules and working conditions affecting costs in the railroad shops with which the outside contractors do not have to contend.

Locomotives

The Green Bay & Western has ordered 2 Mogul type locomotives from the American Locomotive Company.

The Illinois Central, reported in the *Railway Age* of July 9 as asking for prices on the repair of from 100 to 130 locomotives, has rejected the bids, and may make repairs to some of the locomotives in its own shops.

Freight Cars

The Central of Georgia is having repairs made to 200 box cars, in its own shops.

The Atlantic Coast Line is having repairs made to 350 box cars, in its own shops.

The Pittsburgh & West Virginia is having repairs made to 300 hopper cars at the shops of the Koppel Car Repair Company, Koppel, Pa.

Passenger Cars

The Delaware, Lackawanna & Western is inquiring for two 70-ft. steel combination passenger and baggage cars.

Iron and Steel

Mitsui & Co., New York, received bids on August 12, for 500 tons of splice bars, for 60-lb. rails, for the Japanese Government Railways.

The Robert Dollar Corporation, 11 Moore street, New York City, has quoted prices on 17,000 tons of 85-lb. rail for the Pekin-Mukden Railway, China.

The American Manganese Steel Company, Chicago, has again made a reduction of 15 per cent in the price of manganese steel castings, of Balkwill articulated cast manganese railroad crossings.

Signaling

The Canadian National has ordered from the General Railway Signal Company of Canada, Ltd., materials for block signaling the line between Painsec Junction and Sackville, N. B., 30 miles. This consists of 55 top-of-mast low-voltage model 2A signals, with necessary relays and other apparatus to be installed by the company's forces; also signal material for installation near Levis, Quebec, consisting of 12 top-of-mast model 2A signals, with relays, etc.

Miscellaneous

Mitsui & Co., New York, have ordered 20, 4-wheel car trucks from the J. G. Brill Company for the Yokohama Municipal Railway.

THE CHICAGO, BURLINGTON & QUINCY will receive bids until 12 o'clock noon, August 19, for 150 rolled steel wheels for tenders and passenger cars. The company will receive bids until 12 o'clock noon, August 23, for 400 sheets of galvanized steel, grades 24 G and 26 G, and 660 sheets of tank steel.

Railway Construction

ATCHISON, TOPEKA & SANTA FE.—This company contemplates the construction of 10 miles of second track between Florence, Kansas, and Burns, Kansas, at a total cost of approximately $390,000.

CHICAGO, BURLINGTON & QUINCY.—This company has awarded a contract to the Heine Chimney Company, Chicago, for the construction of a reinforced concrete chimney, 150 ft. high, at Lincoln, Neb.

CHICAGO & NORTH WESTERN.—This company contemplates rebuilding a highway bridge over its tracks and yard at Proviso, Ill., which burned on August 7, with a loss of approximately $100,000.

CHICAGO, ROCK ISLAND & PACIFIC.—This company is accepting bids for the construction of a new 10-stall roundhouse at Eldon, Mo. The company is also accepting bids for the construction of a new car repair shop at Inver Grove, Minn., with dimensions of 250 ft. by 87 ft.

CHICAGO, ROCK ISLAND & PACIFIC.—This company has rejected all bids submitted for the construction of a new coaling station at McFarland, Kansas, and will accept new bids.

ILLINOIS CENTRAL.—This company is accepting bids for the work of widening the bridge approaching its passenger platforms at the Randolph street station, Chicago.

JACKSON & EASTERN.—This company, which was recently authorized by the Interstate Commerce Commission to construct its proposed line from Sebastopol to Jackson, Miss., a distance of approximately 60 miles, has completed surveys for this project.

KANSAS, OKLAHOMA & GULF.—This company has applied to the Interstate Commerce Commission for authority to extend its line from Baxter Springs, Kansas, to Pittsburg, a distance of 25 miles.

STATE OF NEW YORK.—The superintendent of buildings of the state of New York who was noted in the *Railway Age* of July 23 (page 104) as opening bids for the construction of a terminal freight house at Rochester, New York, and a bridge over the Hudson river at Cohoes, N. Y., has awarded a contract for the former to W. F. Martens, Rochester, N. Y., and for the latter to the Terry & Tench Company, New York City.

Trade Publications

HEATERS.—Catalog No. 230, designed to suit the needs of all classes interested in heaters and heating, has been issued by the B. F. Sturtevant Company, Hyde Park, Boston, Mass. The first part of the book describes the construction, operation and mechanical details of Sturtevant heaters and is intended for those who are not buying this class of apparatus regularly. The latter part, which gives performance tables, diagrams and dimensions, is for the benefit of engineers, architects and steamfitters, to enable them to choose the heater necessary for any given building. Diagrams showing proper methods of making steam connections and the space occupied by heaters are also included.

CAR DUMPER.—The Wellman-Seaver-Morgan Co., Cleveland, Ohio, in its recently issued bulletin No. 63 presents a detailed description of the construction and operation of the Wellman Revolving Car Dumper which has been developed to meet the demand for a machine of low capacity adaptable to plants where first cost is a governing factor and where efficiency, low operating cost and a minimum of labor is essential. The bulletin is illustrated with photographs, assembly drawings and diagrams showing the machine in progressive stages of the dumping cycle. Diagrammatic information as to the force required to dump railroad cars of high capacities is also included.

Supply Trade News

The Tuco Products Corporation, New York, has opened an agency at Spokane, Wash., in charge of L. J. McNally.

The **Q & C Company** of New York, Chicago and St. Louis are now the exclusive agents in the railroad field for Century steel fence posts as manufactured by the Funk Brothers Manufacturing Company, Chicago Heights, Ill.

William S. Murray, formerly chairman of the Superpower Survey, and **Henry Flood, Jr.**, formerly engineer secretary of the Superpower Survey, have formed the firm of **Murray & Flood**, Grand Central Terminal, New York.

E. A. Woodworth, formerly with the Imperial Belting Company, Chicago, as railroad representative, has left the service of that company to take charge of the southwestern territory for the **United States Metallic Packing Company**, Philadelphia, Pa., with headquarters in Chicago.

Edward B. Germain, general manager of the Harlan plant, Bethlehem Shipbuilding Corporation, Wilmington, Del., has been appointed manager of sales of the corporation, with office at 111 Broadway, New York. Mr. Germain went to Wilmington in December, 1918, from Elizabeth, N. J., where he held the position of general manager of the Moore plant of the same corporation. Cecil W. Weaver, formerly general superintendent of the marine department succeeds Mr. Germain. The Harlan plant, besides its shipbuilding and ship repair facilities has extensive passenger shops with a capacity of 250 steel passenger coaches a year.

American Locomotive Shows Good Earnings for First Six Months

The American Locomotive Company in the six months ending June 30, 1921, according to the semi-annual report issued early this week, earned a profit available for dividends of $3,901,043, as compared with $4,333,927 in the preceding six months ending December 31, 1920. The profit was equivalent to $12.10 per share on the common stock, after providing for the regular $3.50 semi-annual dividend requirements on the preferred stock. The gross for the six months ending June 30, 1921, was $45,114,934. The surplus for the six months, after the payment of dividends, totaled $2,276,043, compared with $708,927 for the preceding six months, but the latter figure was after the deduction of $2,000,000 for reserve for additions and betterments.

In his remarks to stockholders, President Andrew Fletcher says, in part:

The inventory account of materials and supplies on hand and work in progress on June 30, 1921, amounted to $6,555,331 in comparison with $15,119,342 as of December 31, 1920.

The total current assets of the company on June 30, 1921, were $46,666,883 and total current liabilities $6,838,401; the excess of current assets over current liabilities being $39,828,482 after providing in current liabilities a reserve of $2,870,033 to provide for shrinkage in value of notes and bills receivable, discount on Canadian funds and other contingencies and a reserve of $3,011,367 for United States and Canadian income and profit taxes.

On June 30, 1921, the company had no loans payable and had in its treasury on that date among other securities $10,750,000 of United States treasury certificates of indebtedness and $2,000,000 of New York City 6 per cent corporate stock and tax notes.

During the six months ended June 30, 1921, there was expended for additions and betterments to the plants $564,655, which has been charged to the reserves created from surplus of previous years. There has been no money spent on the proposed new plant in the St. Louis district other than the cost of the land and it is the present intention of the company to withhold active development of that property until general business requirements of the company warrant it.

The total unfilled orders for new locomotives, reconditioning of old locomotives and miscellaneous work on June 30, 1921, was $4,595,958, of which domestic business was 16.5 per cent and foreign business 83.5 per cent, the foreign business being mostly for Japan, China, and South Africa.

It is difficult to forecast the future business of this company for the next six to twelve months. At the present time there are but few inquiries for new locomotives either for domestic or foreign use, but there is encouragement in the fact that the administration of our government is working on the many difficult problems affecting the prosperity of the country and we are hopeful that the railroad and transportation matters, so vital and far-reaching in effect on the general business of the country and particularly

to the business of the equipment companies, will be adjusted in the near future on a sound business basis.

The condensed income account for the six months was as follows:

	Six months to June 30, 1921	Six months to Dec. 31, 1920
Gross earnings	$25,989,781	$45,114,934
Manufacturing, maintenance and administrative expenses and depreciation	21,390,554	39,409,404
Gross profit	$4,599,227	$5,705,530
Interest on bonds of constituent companies, etc.	43,184	45,036
Net profit	$4,556,043	$5,660,494
Deduct for United States and Canadian income and profits taxes	655,000	1,326,567
Available profit	$3,901,043	$4,333,927
Dividends on preferred stock	875,000	875,000
Dividends on common stock	750,000	750,000
	$2,276,043	$2,708,927
Reserve for additions and betterments	.....	2,000,000
Surplus	$2,276,043	$708,927

Obituary

Thomas Madill, who served for many years in the sales department of the Sherwin-Williams Company, Cleveland, O., died in Los Angeles, Cal., on July 23. He spent practically his entire business life with The Sherwin-Williams Company in its railway trade.

Henry Carr Ferris, president of the Railway & Mine Supply Corporation, El Paso, Texas, died in that city on July 25. Mr. Ferris was born in Sandusky, Ohio, March 1, 1865, and graduated from Stevens Institute of Technology in the class of 1888, with the degree of mechanical engineer. The following year he began railroad work with the Toledo & Ohio Central, serving as resident engineer and engineer of maintenance until April, 1902. He subsequently served consecutively as assistant superintendent and superintendent on the Union Pacific, vice-president and general manager of the Pittsburgh, Binghamton & Eastern and as general manager of the Chihuahua & Pacific, now the Mexico Northwestern. In February, 1915, he was appointed receiver of the Missouri, Oklahoma & Gulf. In 1919, when that road was under federal control he served as an official of the Railroad Administration and in February, 1920, was elected vice-president and general manager of the reorganized company, the Kansas, Oklahoma & Gulf, resigning from that position on September 1, 1920, to engage in private business at El Paso, Texas.

Charles Haines Williams, first vice-president of the **Chicago Railway Equipment Company,** died at Chicago on the morning of August 8. Mr. Williams was born in Baltimore, Md., on April 1, 1875, and was educated in the public schools of Baltimore and at the Baltimore Polytechnic Institute, from which institution he graduated in 1893. He later took a special course in mechanical drawing and machine design in the Maryland Institute. After four years as a special apprentice in the Mount Clare shops of the Baltimore & Ohio, where he worked in the machine and locomotive shops, the erecting shop and in the foundry, drafting room and test department, Mr. Williams, on July 6, 1897, left the Baltimore & Ohio to become connected with the Chicago Railway Equipment Company, as mechanical inspector. In 1917, he was elected first vice-president of the company and a director, which positions he occupied at the time of his death.

W. S. THROOP, CLAIMS ATTORNEY of the Erie Railroad, in an address to locomotive enginemen, suggests that where they see a highway traveler approaching a crossing without any apparent indication of stopping, and at excessive speed, the engineman should, in addition to the usual crossing signals, sound a series of short blasts. If the wayfarer pays attention, his life may be saved; and if he persists in his efforts to get over the crossing ahead of the train, the succession of short whistle-blasts will attract the attention of any persons within hearing, and thus may enable the railroad to put up a better defense, in case a lawsuit should follow. Mr. Throop calls attention to the fact that outside witnesses usually tell conflicting stories as to whether the engineman did or did not sound the whistle.

Railway Financial News

CANADIAN PACIFIC.—*Declares Regular Dividend.*—This company has declared the regular quarterly dividend of 2½ per cent on common stock and the usual semi-annual dividend of 2 per cent on the preferred stock, both payable October 1 to stock of record September 1.

CENTRAL VERMONT.—*Loan Approved.*—The Interstate Commerce Commission has approved the granting of a loan to this company of $65,000 for three years, for the purpose of retiring certain equipment notes.

CHARLES CITY WESTERN.—*Authorized to Issue Bonds.*—This company has been granted authority by the Interstate Commerce Commission to issue $10,400 of 10-year, 6 per cent, first mortgage notes to be dated July 1, 1921, and to be sold at not less than par. This approval is supplementary to authority granted to the company on July 8 to issue $373,600 of these bonds, making the total to be issued $384,000.

CHICAGO, ROCK ISLAND & PACIFIC.—*Authorized to Pledge Bonds.*—This company has been authorized by the Interstate Commerce Commission to pledge and repledge from time to time all or any part of $8,364,000 of first and refunding mortgage gold bonds, now pledged without the authorization of the commission, as collateral security for outstanding shot term notes or for any short term notes which may be issued.

DENVER & RIO GRANDE.—*Bond Interest Not to Be Paid.*—The semi-annual interest amounting to about $350,000 on the Denver & Rio Grande adjustment, 7 per cent bonds, due October 1, will not be paid, according to an announcement made August 9. The interest is payable, if earned during the period of January 1 to June 30. The principal reason for not paying the interest is understood to have been the Pueblo flood in which the road suffered damage estimated at about $1,500,000.

The Wall Street Journal says:

With the announcement that the earnings did not warrant the adjustment interest payment it became known that there was another reason why no action could be taken on it. To allow the payment, sanction of the board would be necessary and this is not possible inasmuch as there is no longer a quorum of the old Denver board. Of the eleven original members six have resigned time to time in the past year or so. This, together with the essential fact that the earnings did not cover the interest, led to the announcement of deferment made by an official on behalf of the five remaining board members.

FLINT BELT RAILROAD.—*Authorized to Construct New Line.*—The Interstate Commerce Commission has granted this company a certificate of public convenience and necessity authorizing the construction and operation of a line of railroad in Genesee County, Michigan. The company proposes to build a road 8¼ miles in length, establishing a belt line around the congested district of the city of Flint, Mich. The company expects to complete and to put in operation about 5¼ miles this year and to have the line in complete operation before July 1, 1924.

The commission has further issued an order permitting the company to retain all excess earnings for a period of ten years ending July 1, 1934, as provided in section 15a of the Interstate Commerce Act.

Authorized to Issue Stock.—The company has also been granted authority by the commission to sell for cash, at par, $1,000,000 of capital stock, the proceeds to be used for the construction and equipping of the line. The cost of the line is estimated at $1,002,411, excluding right-of-way, substantially all of the land having been obtained by donation.

INTERNATIONAL & GREAT NORTHERN.—*Asks Authority to Issue Notes.*—James A. Baker, receiver, has asked authority from the Interstate Commerce Commission to issue 24 notes aggregating $194.300, exclusive of interest, payable one each month, after date, in part payment for locomotive equipment, the purchase price of which is $388,600, purchased from the Baldwin Locomotive Works.

LEAVENWORTH & TOPEKA.—*Granted Authority to Issue Bonds.*—The Interstate Commerce Commission granted authority to this company to issue at par $80,000 of first mortgage 7 per cent bonds, of which $57,000 are to be delivered to certain persons in

part payment for equitable or contingent interests held by them in the line operated by the applicant; $3,000 to be sold to reimburse its treasury for a like amount expended in cash in part payment for such equitable or contingent interest, and $20,000 to be deposited with the Central Trust Company, of Topeka, Kan., for the purpose of creating a sinking fund required by the state laws of Kansas.

Asks Authority to Increase Capital Stock.—This company has asked the Interstate Commerce Commission for approval of an increase in its capital stock from $100,000 to $152,175. The increase is for the purpose of exchanging the stock of the applicant for $50,000 of the aid bonds of the Leavenworth & Topeka Railroad Aid Benefit District of Jefferson County, Kan., to aid in the construction, operation and maintenance of its line. The company has also asked authority to renew $43,274 of short-term notes.

LOUISVILLE & NASHVILLE.—*Asks Authority to Issue Stock.*—The Louisville & Nashville has asked authority from the Interstate Commerce Commission to issue $53,000,000 of capital stock for distribution as a stock dividend pro rata among its stockholders. The applicant also asks authority to execute and deliver its first and refunding mortgage to secure divers series of bonds, to issue Series A of these bonds aggregating $28,615,000 and to sell $12,753,000 of this amount outright to J. P. Morgan & Co. at not less than 94½ net to the applicant and to hold the balance in its treasury for future disposition. The bonds to be issued and sold are to bear interest at 6 per cent, payable semi-annually, to mature April 1, 2003, and to be redeemable at the option of the Louisville & Nashville, October 1, 1936, or on any interest date thereafter at 102 per cent of the face amount, together with accrued interest.

The execution of the first and refunding mortgage and the issuance of various series of bonds is for the purpose of reimbursing the applicant's treasury for the refunding of various funded debts and for meeting other present and future financial needs of the company. The company states that a great part of its earnings, which might have been paid to the stockholders in cash, has been used to improve and enlarge its property. The applicant states that $53,000,000 was determined upon as the amount of the increase because it was decided that the total authorized capital stock of the company should be not less than $125,000,000, and it is stated that the company's investment of earnings in property has been far in excess of the proposed issue.

As to the mortgage and bond issue the management of the carrier reached the conclusion, according to the application to the Interstate Commerce Commission, that it was essential that some plan be devised at once for the making of one large mortgage through which the company's existing mortgage debts could be refunded as they matured and which would provide for other financial needs of the company.

MIDLAND VALLEY.—*Asks Authority to Issue Bonds.*—This company has asked authority from the Interstate Commerce Commission to issue $363,000 of first mortgage, 5 per cent bonds to reimburse it in part for expenditures from current income on additions and betterments.

NEW YORK CENTRAL.—*Authorized to Issue Bonds.*—The New York Central has been granted authority by the Interstate Commerce Commission to issue $4,425,000 of 4 per cent consolidation mortgage bonds in exchange, par for par, for a like amount of New York Central & Hudson River Railroad Company's 3½ per cent Lake Shore collateral bonds.

READING COMPANY.—*Common Stockholders' Committee Granted Right to Appeal.*—Judge Thompson on August 4 granted to the committee of the common stockholders, of which Seward Prosser is chairman, the right to appeal to the United States Supreme Court from the decision of the district court relative to the segregation of the coal and railroad properties in which decision it was held that the common and preferred stockholders had equal rights of participation in the segregation.

TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS.—*Asks Authority to Pledge Securities.*—The Terminal Railroad Association of St. Louis has asked authority from the Interstate Commerce Commission to pledge $439,000 par value, general mortgage, 4 per cent bonds with the Secretary of the Treasury in lieu of $285,000 now held as collateral security for the performance of the applicant's contract under Section 209 of the Transportation Act in connection with advances thereunder, to save the applicant the premium it now pays for the surety bonds.

Guaranty Certificates Issued

The Interstate Commerce Commission has certified partial payments of guaranty to the following roads:

Franklin & Pittsylvania	$3,000
Live Oak, Perry & Gulf	10,000
Savannah & Statesboro	2,500

The Interstate Commerce Commission has certified to the Treasury partial payment of guaranty as reimbursement for deficits during Federal control to the following roads:

Butler County	$50,000
Moshassuck Valley	15,000
Mt. Jewett, Kinsua & Riterville	10,131
St. Louis-San Francisco	500,000

Tentative Valuations

The Interstate Commerce Commission has announced the tentative valuation of the used property of the Bangor & Aroostook, Northern Maine Seaport Railroad and the Van Buren Bridge Company, as of 1916, as $25,350,084. The tentative valuation of the used property of the Seaport Railroad is $3,850,000, and of the Van Buren Bridge Company, $77,500, which is included in the foregoing total.

The Interstate Commerce Commission has also announced supplemental tentative valuations of the used property of the following carriers:

Clarendon & Pittsford	1917	$490,212
Kankakee & Seneca	1915	825,645
Muncie Belt	1915	62,654
Roscoe, Snyder & Pacific	1916	558,393

Treasury Payments from Revolving Fund

The Treasury announced the payment of loans from the revolving fund to the following carriers:

Akron, Canton & Youngstown	$212,000
Chesapeake & Ohio	2,669,000
Seaboard Air Line	293,500

The Treasury also announced partial payments of guaranty to the following roads:

Alabama Northern	$3,000
Bristol	3,000
Butler County	50,000
Georgia Northern	1,500
Kentwood & Eastern	64,000
Midland Valley	63,000
Moshassuck Valley	15,000
Penn Yan & Lake Shore receiver	15,000
Railway Transfer Company of the City of Minneapolis	65,000
St. Louis-San Francisco	500,000
Ursina & North Fork	20,000

Dividends Declared

Canadian Pacific.—Common 2½ per cent, quarterly, and preferred, 2 per cent semi-annually, payable October 1 to stockholders of record September 1.

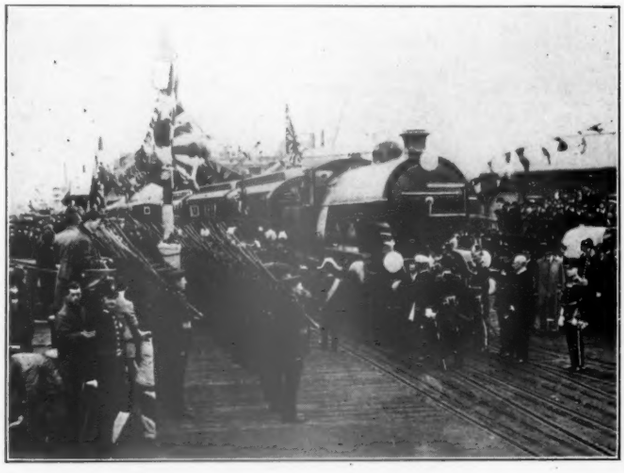


Photo by Keystone

Crown Prince of Japan Arriving at Portsmouth, England

Annual Report

Chicago, Burlington & Quincy R. R. Co.—Sixty-seventh Annual Report

CHICAGO, January 1, 1921.

To the Stockholders of the Chicago, Burlington & Quincy Railroad Company:

Federal control of this Company's transportation system ended on February 29, 1920.

The annual compensation for its use, as provided by the contract of October 8, 1918, between the Director General and this Company was as follows:

Chicago, Burlington & Quincy Railroad Company.....	$33,360,683.11
Quincy, Omaha & Kansas City Railroad Company.....	29,396.50
	$33,390,079.61

The compensation which will be allowed for the months of January and February, 1920, is understood to be 60/366 of the annual compensation.

These figures are based on the average railway operating income of the Company for the three year period July 1, 1914, to June 30, 1917, inclusive. They are subject to a revision (not yet completed) by the Interstate Commerce Commission.

The following statement cannot be accepted as a final showing of the income of the Corporation for the year 1920. The final figures will not be known until complete settlements are reached of the Company's claims against the Railroad Administration and for the Guaranty Period under the Transportation Act, 1920.

The Interstate Commerce Commission in its annual report of carriers has called for a table designed to show the income separately for the two months of Federal control, six months of the Guaranty Period and four months of the Corporate Period, and that table is given on pages 28 and 29 of this report.

Beginning with the Guaranty Period, this Company adopted the plan, authorized in the Interstate Commerce Commission's classifications of accounts, of keeping its accounts strictly on the basis of accruals. This change affected but slightly the Corporate Income for the year as payments made subsequent to the end of Federal control on February 29, 1920, but attaching to transactions had during Federal Control Period, were charged or credited to the account of the Director General.

COMPARATIVE STATEMENT OF CORPORATE INCOME, YEARS ENDED DECEMBER 31

1920		1919
$5,560,113.85†	.....Standard return.....	$33,360,683.11
	RAILWAY OPERATING REVENUES	
$110,385,624.32	..... Freight	.....
31,445,171.57	..... Passenger	.....
3,220,489.33	..... Mail	.....
3,797,628.95	..... Express	.....
2,987,078.26	.....All other transportation.....	.....
3,490,458.49	..... Incidental	.....
157,354.50	.....Joint facility	.....
$155,483,805.42	..Total railway operating revenues..	.....
	RAILWAY OPERATING EXPENSES	
$28,367,933.14	..Maintenance of way and structures..	.....
36,353,037.27	.....Maintenance of equipment.....	.....
1,580,802.84	..... Traffic	.....
69,529,774.77	..... Transportation	.....
1,976,085.75	.....Miscellaneous operations.....	.....
4,557,894.10	..... General	$284,839.10*
348,107.72 Cr.	..Transportation for investment—Cr..	.....
$142,017,420.15	..Total railway operating expenses..	$284,839.10
$19,026,499.12	..... Net	$33,075,844.01
$7,707,712.65	.....Railway tax accruals.....	$2,340,837.66‡
87,835.11	....Uncollectible railway revenue....	.....
$11,230,951.36	Railway operating income and standard ..... return	$30,735,006.35
	NON-OPERATING INCOME	
$1,803,974.48 Dr.	.....Equipment rents (net).....	.....
1,808,522.59 Dr.	.....Joint facility rents (net).....	.....
110,779.88	.....Miscellaneous rents.....	$221,716.97
977,616.56	.Dividends and miscellaneous interest.	924,400.51
8,175.14	.....Miscellaneous income....	6.80
21,991,964.87	Estimated amount due under guaranty .....Transportation Act, 1920.....	.....
$19,476,039.38	.....Total non-operating income.....	$1,146,124.28
$30,706,990.74	.....Gross income.....	$31,881,130.63
	DEDUCTIONS FROM GROSS INCOME	
$53,888.64	.....Miscellaneous rents.....	$49,167.11
6,816,006.44	.....Interest on funded debt.....	6,669,586.79
2,877.44	.....Interest on unfunded debt.....	295,275.84
57,771.00	Amortization of discount on funded debt	56,711.24
852,083.47‡	....Miscellaneous income charges....	1,267,918.80‡
$7,782,626.99	..Total deductions from gross income..	$8,338,659.78
$22,924,363.75	.....Net income.....	$23,542,470.85
	DISPOSITION OF NET INCOME	
$231,077.96	.....Sinking funds.....	$502,255.25
8,867,128.00	..... Dividends	8,867,128.00
$9,098,205.96	....Total appropriations of income....	$9,369,383.25
$13,826,157.79	Income balance transferred to profit .....and loss.....	$14,173,087.60

†January and February, 1920. *Corporate. ‡War tax only.
‡Includes "Lap over" items credited and charged by Federal Administration.

CAPITAL STOCK AND FUNDED DEBT

On December 31, 1919, the Capitalization outstanding in the hands of the public was:

Capital Stock	$110,839,100.00
Funded Debt	168,050,000.00
Total	$278,889,100.00

During the year 1920 the following changes were made therein:

By the issuance of Gold Notes for equipment acquired from allocation by the United States Railroad Administration last note maturing Jan. 15, 1935.....	$6,060,000.00
By the purchase of Sinking Fund Bonds, 1921.....	3,000.00
By the purchase of Sinking Fund Bonds, 1922 (Denver Extension)	68,700.00
Total Addition.....	$5,988,300.00

And the outstanding on December 31, 1920, was:

Capital Stock	$110,839,100.00
Funded Debt	174,038,300.00
Total	$284,877,400.00

On November 3, 1920, an application was made to the Interstate Commerce Commission for authority to issue additional Capital Stock to the amount of $60,000,000. This application has been granted and arrangements made to make the issue early in 1921.

During the year the Sinking Fund 4s of 1921 were paid off and the Denver Extension bonds of 1922 were all retired excepting an outstanding balance of $10,300, which have not yet been presented, and for which funds have been deposited with the Trustee and the mortgage released.

GENERAL OPERATIONS

Revenues:	
Total Operating Revenues for 1920.....	$186,872,918.07
Total Operating Revenues for 1919.....	154,011,437.62
Increase.....	$32,861,480.45 or 21.34%

This increase was distributed as follows:

Freight Revenues.....	$24,626,944.77— 23.01%
Passenger Revenues	1,122,980.62— 3.18%
Mail Revenues	4,074,813.76—165.48%
Miscellaneous Transportation Revenues.....	2,128,594.82— 36.61%
Incidental Operating Revenues.....	908,146.48— 26.94%
	$32,861,480.45— 21.34%

The relative tonnage of commodities as compared with year 1919, was, in:

Farm products increased.....	28,663 tons— 0.34%
Animal products decreased.....	346,867 tons—10.35%
Mine products increased.....	6,171,743 tons—42.80%
Forest products decreased.....	14,373 tons— 0.47%
Manufactured products increased.....	1,115,458 tons—13.15%
Total carload shipments increased.....	6,954,624 tons—18.39%
Total L. C. L. shipments increased.....	43,205 tons— 1.78%

The tonnage handled in 1919 was restricted by reason of the general business depression which followed the close of the war and the coal strike in the latter part of the year. In comparing with 1918 the revenue tons decreased 31,160 or .066 per cent.

The decrease in tonnage of animal products was due partly to the extreme dry weather on the northwestern lines in 1919, which increased live stock shipments for feeding during that year.

The increase in tonnage of mine products was due to the coal strike in 1919, during which year the decrease in tonnage of bituminous coal as compared with 1918, was 5,730,768 tons. This tonnage carried in 1920 was less than that of 1918 by 721,588, or 4.14 per cent.

Expenditures (Operating)—

The increase in Operating Expenses was distributed:

Maintenance of Way and Structures.....	$8,775,458.42—40.84%
Maintenance of Equipment.....	9,944,573.27—30.67%
Traffic Expense	687,859.44—64.62%
Transportation Expense	19,657,867.77—32.67%
Miscellaneous Operations	500,981.98—28.04%
General Expense.....	1,007,196.09—24.07%
Total Operating Expenses, 1920.....	161,304,686.05
Total Operating Expenses, 1919.....	120,777,801.16
Increase.....	$40,526,884.89—33.55%
Operating Ratio, 1920.....	86.32%
Operating Ratio, 1919.....	78.42%
Increase.....	7.90%
Operating expenses per revenue train mile, 1920.	4.13
Operating expenses per revenue train mile, 1919.	3.35
Increase.....	$0.78—23.28%
The total payroll increased.....	$28,920,520.04—37.83%
The total material expense (excluding fuel) increase	9,554,628.14—39.77%
The total fuel expense increased.....	5,579,854.99—40.58%

Expenditures (Capital)—

Expenditures during the year were:

For Road	$8,516,660.45
For Equipment	6,176,944.81
For General.....	43,851.09
Total.....	$14,737,456.35

Capital Expenditures generally have been directed toward the improvement of existing property, particularly locomotive shops and terminals, yards and station facilities and primarily for increasing efficiency and economy of operation.

There have been no new main lines or extensions built during the year.

Substantial progress has been made by the Chicago Union Station Company upon the new Union Station and Terminal project, with consideration of prevailing conditions; the work during the year embracing the completion of the viaducts at Harrison, Taylor and Randolph streets, and progress upon the viaducts at Polk and Canal streets, and Roosevelt Road, and upon the concrete dock wall along the south branch of the Chicago River.

Progress has been made upon the work of rebuilding freight facilities at Harrison and Canal streets made necessary because of the Chicago Union Station project, this work embracing foundations, sewers and track

rearrangements resulting in total expenditures for the year of $489,078.25, bringing the total cost to date to $2,173,051.00.

Plans have been completed and approved by the Postmaster General for the new building for handling railway mail to be built in the vicinity of the Union Station, and construction will be undertaken early in 1921.

The elevation of tracks and revision of grades through the City of Aurora, Ill., was continued, and that portion lying west of Broadway was completed. This work embraces the change of alignment of main tracks and the construction of new subways, involving an expenditure for the year of $388,421.61, bringing the total expenditure to date to $2,312,961.55.

Additional engine terminal facilities have been constructed at Galesburg, Ill., embracing a 16-stall roundhouse with coal, water and cinder handling facilities. The expenditure for this project amounted to $163,257.95. This improvement was necessary and will greatly facilitate the handling of power at this important point.

New locomotive facilities at Pacific Junction were constructed, consisting of one 6-stall roundhouse with coal, water and cinder handling facilities involving an expenditure of $82,945.99. This likewise was a much needed improvement for the purpose of facilitating the handling power.

Locomotive terminal facilities at Denver, Colo., were improved during the year by the installation of improved power plant and coal and water facilities, involving an expenditure of $67,240.66. There has also been acquired for the purpose of developing a locomotive repair shop, a tract of land of ample size and conveniently located for this purpose.

The construction of second track on the Beardstown and St. Joseph Divisions which had been temporarily suspended in 1919, was continued during the year, involving a total expenditure of $389,255.64. This embraced the completion of six miles of line between Ayres, Ill., and Durley, Ill., and eleven miles between Waldron, Mo., and Beverly, Mo.

The customary program of substituting permanent construction for temporary bridges was continued. An important item of this program was the completion of the Platte River Bridge at Northport, Neb., placed in service in August, and involving an expenditure during the year of $22,418.46, bringing the total expenditure for this project to $294,050.85.

The program of applying automatic block signals to important traffic routes for safety and efficiency of operation was continued during the year. There was undertaken the construction of 300 miles of such signals on the Aurora and Lincoln Divisions. There were placed in operation during the year, 97 miles, and the remainder will be completed early in 1921. The expenditures for the year were $448,552.02.

The program of laying 90 and 100 pound rail in main line was continued during the year. There were applied a total of 340 miles of new rail and 206 miles of second hand rail, the latter being upon less important lines.

Arrangements were made during the year for the purchase and construction of the following equipment:

15 Switch engines. 31 Freight engines. 500 Stock cars.

Substantial deliveries were made upon these undertakings during the year.

Industrial—

There were constructed and extended during the year industrial tracks as follows:

	New Tracks	Extensions
On Lines East	32	16
On Lines West	17	4
Total New Tracks	49	20

Industrial activity was not up to normal on account of the reaction following the close of the war, but a number of substantial and important industries have been located. Among the important developments in this connection were the completion of three beet spurs in the North Platte Valley to serve two new sugar factories, one which has been completed at Mitchell, Neb., and another at Minatare, Neb., not yet completed. These facilities serve a district developing an increased beet acreage in 1920 over 1919 of approximately 10,500 acres.

During the year the oil receipts at refineries served, amounted to 6,673 carloads, and outbound shipments therefrom amounted to 40,908 carloads. The bulk of the inbound oil was transported by pipe lines. In addition, there was a movement of crude oil not handled at refineries, of 521 carloads, making a grand total movement of oil originating in Wyoming of 41,429 carloads. The production of crude oil within the state is constantly increasing, and large additions to important refineries are now under way. A continued growth of this class of tonnage may be anticipated.

There were 1,549 cars of immigrants' effects received on the McCook, Alliance, Sterling, Sheridan and Casper Divisions, and a total of 5,692 families located. There were 2,222,389 acres of land homesteaded in Wyoming, and this should cause several thousand new families to come into that state. In addition there were about 10,000 acres of irrigated homesteads taken up divided equally between the Shoshone and North Platte projects which should mean an influx of approximately 150 new families.

Agricultural—

Two special agricultural exhibit cars were operated during the year on Lines West; one during March to stimulate increase in acreage and to improve the quality of the potato crop; and another during the fall to stimulate better farming in the semi-arid districts. This effort aroused a great deal of interest, about four thousand farmers inspecting the potato car, and 270 farmers were supplied with certified seed from the car. In field tests this seed proved superior to the native seed.

About 430,000 pounds of improved seed potatoes were purchaser through exchange bulletins. The potato acreage was increased about 15 per cent above last year. A poster calling attention to the necessity of providing storage for potatoes and grain resulted in the construction of twenty-five potato storage cellars.

On the "better farming" car, attention was given to the importance of crop rotations for dry lands, adapted seeds, dairying and silos and greater diversification and safer lines of farming. One hundred and thirteen towns were visited, with a total attendance of about 14,000 farmers.

A large number of farmers' meetings have been attended. Several thousand copies of special posters and bulletins have been issued on potato growing, storage, preventing losses in handling potatoes, farm feeds, silos and dairying. Three hundred thousand pounds of miscellaneous seeds, and thirty-nine carloads of cotton cake, corn, hay and other feeds have been transferred through the marketing service. Three carloads of dairy cows were purchased and shipped to Wyoming farmers. A market was found for four carloads of seed potatoes.

There has been a steady growth in the population and the number of farms in the western territory. Personal letters and advertising booklets were sent to 2,138 persons who inquired for land. These inquiries were a continuation from the year previous, as no colonization advertising was done during the past year. Land values were advanced from 50 to 150 per cent.

There has been a steady increase in the dairy industry in spite of the enormous increase in grain production resulting from the high prices.

Substantial progress has been made in the matter of final settlements with the United States Railroad Administration of matters growing out of Federal control.

By order of the Board of Directors.

HALE HOLDEN,
President.

GENERAL BALANCE SHEET

December 31, 1920

Assets

Investments:		
Property investment—road and equipment:		
Road	$406,501,585.72	
Equipment	99,813,273.64	
General expenditures	1,139,235.09	
		$507,454,094.45
Sinking funds:		
Book assets	$10,830,984.54	
Company's own issues included, Par value	10,816,200.00	
		14,784.54
Deposits in lieu of mortgaged property sold		622,475.30
Miscellaneous physical property		917,965.13
Investments in affiliated companies:		
Stocks	$30,194,892.12	
Bonds	1,577,236.93	
Notes	476,014.72	
Advances	1,566,070.14	
		33,814,213.91
Other investments:		
Stocks	$5,510.00	
Bonds	7,370,318.00	
Notes	239,064.08	
Miscellaneous	275.00	
		7,615,167.08
Total investments		$550,438,700.41
Current assets:		
Cash	$8,170,985.14	
Time drafts and deposits	30,000.00	
Special deposits	2,055.39	
Loans and bills receivable	6,063,464.86	
Traffic and car-service balances receivable	2,760,423.71	
Net balance receivable from agents and conductors	4,744,460.76	
Miscellaneous accounts receivable	8,714,149.60	
Material and supplies	21,659,456.12	
Rents receivable	22,022.65	
Other current assets	1,126,074.47	
Total current assets		$53,293,092.70
Deferred assets:		
Working fund advances	$131,884.33	
Other deferred assets	704,034.84	
Total deferred assets		835,919.17
U. S. Government assets		68,411,065.86
Unadjusted debits:		
Insurance premium paid in advance	$85,277.64	
Discount on funded debt	2,147,158.17	
Other unadjusted debits	31,130,403.15	
Total unadjusted debits		33,362,838.96
Grand total		$706,341,617.10

Liabilities

Capital Stock:		
Common Stock		$110,839,100.00
Long term debt:		
Bonds held by the public	$174,038,300.00	
Bonds held by trustees, account sinking funds	10,816,200.00	
Bonds owned by the Company, unpledged	12,205,700.00	
Total	$197,060,200.00	
Less bonds held by or for the Company, included in above	23,021,900.00	
Total long term debt		174,038,300.00
Current liabilities:		
Traffic and car-service balances payable	$3,864,868.11	
Audited accounts and wages payable	15,685,201.04	
Miscellaneous accounts payable	1,223,444.19	
Interest matured unpaid	1,051,507.50	
Dividends matured unpaid	551.25	
Funded debt matured unpaid	51,600.00	
Unmatured interest accrued	1,158,755.12	
Other current liabilities	1,921,558.04	
Total current liabilities		24,957,485.25
Deferred liabilities:		
Other deferred liabilities	$135,308.29	
Total deferred liabilities		135,308.29
U. S. Government deferred liabilities		76,028,122.88
Unadjusted credits:		
Tax liability	$5,186,435.49	
Insurance reserves	1,578,935.57	
Operating reserves	9,235,174.55	
Accrued depreciation—Equipment	42,019,152.54	
Other unadjusted credits	5,661,611.60	
Total unadjusted credits		63,681,309.75
Corporate surplus:		
Additions to property through income and surplus	$51,725.81	
Funded debt retired through income	31,744,732.60	
Sinking fund reserves	10,736,141.82	
Profit and loss	214,129,390.70	
Total corporate surplus		256,661,990.93
Grand total		$706,341,617.10

[Advertisement]

Railway Officers

Executive

Samuel M. Russell, general superintendent of the Toledo, Peoria & Western, with headquarters at Peoria, Ill., has been appointed receiver with the same headquarters, effective August 3, succeeding E. N. Armstrong, deceased. Mr. Russell was born at Bedford, Pa., and was educated at the Sheffield Scientific School of Yale University. He entered railroad service in 1889 as a rodman in the engineering corps of the Pennsylvania lines west of Pittsburgh, and was employed in this work during summer vacations until 1892. On the latter date he was employed on construction work in the engineering department of the Pennsylvania, and two years later was transferred to the freight department at Canton, Ohio. In 1894 and 1895 he served at Canton and in the office of the auditor of freight receipts at Pittsburgh, Pa. In 1895 he was appointed engineer in the maintenance of way department, where he served until December, 1899, when he was promoted to assistant engineer maintenance of way. A year later he was promoted to engineer maintenance of way of the Pennsylvania lines west of Pittsburgh. Mr. Russell entered the service of the Toledo, Peoria & Western in February, 1904, as engineer maintenance of way. He was appointed superintendent a few months later and served in that position until December, 1916, when he was promoted to general superintendent, in which position he was serving at the time of his recent appointment.

S. M. Russell

Financial, Legal and Accounting

G. B. Matthews, Jr., has been appointed car accountant of the Columbus & Greenville, with headquarters at St. Louis, Missouri, effective August 1. Mr. Matthews succeeds R. B. McAlpin.

W. J. Bingham, auditor of through passenger traffic of the Pennsylvania with headquarters at Philadelphia, has retired from active railroad service after 52 years in the service of the company.

F. G. Middleton, assistant auditor of the Indiana Harbor Belt with headquarters at Gibson, Indiana, has been appointed auditor of disbursements with the same headquarters. **C. K. Thomas** has been appointed auditor of freight accounts with headquarters at Gibson.

A. B. Bierck, assistant secretary of the Philadelphia & Reading, has been appointed comptroller with headquarters at Philadelphia, succeeding **G. H. Parker** who has been appointed general auditor. **W. K. Bean** has been appointed assistant auditor of disbursements. Mr. Bierck will in addition to his new duties retain his former positions as vice president of the Reading Company and assistant secretary of the Philadelphia & Reading.

Operating

G. W. Todhunter, general yardmaster of the Southern Pacific with headquarters at Fresno, California, has been promoted to the position of terminal trainmaster with the same headquarters. **H. A. Kuehn** succeeds Mr. Todhunter as general yardmaster.

Ernesto O. Y. Llano, superintendent of the Nacozari Railroad, with headquarters at Sonora, Mexico, has been appointed general manager of the National Railways of Mexico with headquarters at Mexico City.

R. H. Johnson, general manager and purchasing agent of the Peoria & Pekin Union, with headquarters at Peoria, Ill., has resigned and the purchasing department has been placed under the jurisdiction of the president's office.

L. K. Owen, superintendent of dining cars of the Spokane, Portland & Seattle with headquarters at Portland, Oregon, has been appointed superintendent of dining cars of the Northern Pacific with headquarters at St. Paul, Minnesota, effective August 15, succeeding G. W. Nelson, assigned to other duties.

Traffic

P. C. McCormick has been appointed commercial agent of the Baltimore & Ohio, with headquarters at Chicago.

H. E. Heal has been appointed Canadian passenger agent of the Pennsylvania, with headquarters at Toronto, Ont.

W. S. Farnsworth has been appointed general agent of the Gulf, Colorado & Santa Fe with headquarters at Mexico City, Mexico.

L. F. Daspit, traffic manager of the Shreveport, La., Chamber of Commerce, has been appointed assistant general freight agent of the Southern Pacific, Texas and Louisiana lines, with headquarters at Houston, Tex.

H. M. Jouver, acting general freight and passenger agent of the Baltimore & Ohio with headquarters at Chicago, has been appointed general freight and passenger agent with the same headquarters, effective August 1.

J. O. Gill, has been appointed district freight agent of the Gulf, Mobile & Northern, with headquarters at Memphis, Tennessee, effective August 3. Mr. Gill succeeds **W. H. Askew,** who has been transferred to Kansas City, Missouri.

C. W. Getty, special representative, passenger department, of the Pennsylvania with headquarters at Chicago, has been promoted to assistant general passenger agent with the same headquarters, effective August 1, succeeding W. R. McFarland, resigned.

F. A. Edmonson, formerly commercial agent of the St. Louis-San Francisco, with headquarters at Cincinnati, Ohio, has re-entered railroad service and has been appointed general agent of the same company, with headquarters at New Orleans, La.

W. M. Brooks, foreign freight agent of the Atlanta, Birmingham & Atlantic, with headquarters at Atlanta, Ga., has been appointed commercial agent, with headquarters at Cincinnati, Ohio, succeeding J. J. McCarty, resigned, and the office of foreign freight agent has been abolished.

G. F. Kay, freight traffic representative of the Southern, with headquarters at Dallas, Tex., has been promoted to commercial agent, with the same headquarters, effective August 1, succeeding C. M. Agnew, deceased. **H. B. Coogan,** freight traffic representative, with headquarters at Memphis, Tenn., succeeds Mr. Kay.

A. C. Irons, formerly general passenger agent of the Chicago Great Western, with headquarters at Chicago, who was incorrectly reported in the *Railway Age* of July 16 (page 144), as having become associated with the D. H. Howland Sugar Company, has become a member of the firm of F. C. Van Ness & Son, with headquarters at Toledo, Ohio, instead.

E. S. Manchester, traffic representative of the New York, Chicago & St. Louis, with headquarters at Buffalo, N. Y.,

has been promoted to division freight agent, with headquarters at Erie, Pa. **G. B. Merrill,** freight representative, with headquarters at Erie, has been appointed traffic representative with headquarters at Buffalo, succeeding Mr. Manchester. **J. V. Jamieson** succeeds Mr. Merrill. The promotions and appointments were effective August 1.

E. C. Marks, traveling freight agent of the Louisville & Nashville, with headquarters at New Orleans, La., has been promoted to commercial agent, with the same headquarters. **J. E. Power,** city freight service agent, with headquarters at New Orleans, Louisiana, succeeds Mr. Marks. **G. W. Kingsmill** succeeds Mr. Power. The promotions were effective August 1.

A. S. Collins has been appointed commercial agent of the Chicago, Rock Island & Pacific with headquarters at St. Paul, Minn., succeeding **J. B. Rayn** who has been promoted to division freight agent with headquarters at Des Moines, Ia. Mr. Rayn succeeds **W. S. Williams** who has been transferred as division freight agent to Estherville, Ia., succeeding M. M. Knapp, retired. These changes were effective August 6.

C. T. Mackenson, Jr., has been appointed assistant general freight agent of the Central region of the Pennsylvania with headquarters at Pittsburgh, Pa. Mr. Mackenson was born at Harrisburg, Pa., on June 16, 1886, and was educated in the public schools of that city. He entered railway service on April 7, 1903, in the office of the general freight agent of the Cumberland Valley and became chief clerk to the general freight agent of that company on June 1, 1910. He entered the service of the Pennsylvania as chief clerk to the division freight agent at Philadelphia on August 1, 1912. On July 1, 1914, Mr. Mackenson became chief rate clerk in the general freight department of the company and on December 1, 1916, was appointed division freight agent at Altoona, Pa. On November 26, 1917, he entered military service and returned on May 1, 1919, as division freight agent at Uniontown, Pa., and was transferred to Pittsburgh in a similar capacity in September of that year. He was serving in this position on August 1, when his appointment to his new position became effective.

Claude W. Getty, special representative passenger department of the Pennsylvania, with headquarters at Chicago, has been promoted to assistant general passenger agent, with the same headquarters, effective August 1. Mr. Getty was born at Norristown, Pa., on January 12, 1890, and was educated at the University of Pennsylvania. He entered railroad service on June 20, 1907, with the Pennsylvania at Philadelphia, Pa., and after 4 years' service in various positions in the operating and transportation departments, he was transferred to the passenger department of the general offices at Philadelphia. He served in various capacities in that department until November 1, 1917, when he was made chief clerk to the passenger traffic manager. When the Northwestern region of the Pennsylvania was created on March 1, 1920, Mr. Getty was transferred to the passenger department at Chicago, as special representative, with special assignment to the developing of dining car service of the lines west of Pittsburgh. He was serving in this position at the time of his recent promotion.

Appointments and promotions in the traffic department of the Pennsylvania have been made effective August 1 as follows: **C. T. Mackenson,** division freight agent, Central region, with headquarters at Pittsburgh, has been promoted to assistant general freight agent, Central region, with the same headquarters, succeeding R. E. Cook, resigned. **H. H. Gray,** division freight agent, Central region, with headquarters at Pittsburgh, with jurisdiction over the Lines West has been transferred to the Lines East, succeeding Mr. Mackenson. **F. X. Quinn,** division freight agent, Central region with headquarters at Buffalo, N. Y., has been transferred to Pittsburgh, succeeding Mr. Gray. **S. T. Stackpole** succeeds Mr. Quinn. **E. S. Neilson,** division freight and passenger agent, Eastern region, with headquarters at Chambersburg, Pa., has been appointed division freight agent with headquarters at Baltimore, Md., succeeding Mr. Stackpole. **F. W. Nash,** division freight agent, Central region, with headquarters at Columbus, O., succeeds Mr. Neilson. **W. R. Cox** succeeds Mr. Nash. **J. M. Steenberg,** division freight agent, Northwestern region, with headquarters at Toledo, O., has been promoted to assistant to the freight traffic manager, Northwestern region, with the same headquarters. **H. C. Oliver,** division freight agent, Northwestern region with headquarters at Richmond, Ind., succeeds Mr. Steenberg. **J. E. Collins** succeeds Mr. Oliver.

Engineering, Maintenance of Way and Signaling

E. J. Bayer, assistant engineer maintenance of way of the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at Galion, Ohio, has been appointed engineer maintenance of way of the Evansville, Indianapolis & Terre Haute, with new headquarters at Washington, Indiana, effective August 1, 1921.

Mechanical

James I. Mailer, whose promotion to superintendent of motive power of the Fort Smith & Western, with headquarters at Fort Smith, Ark., was announced in the *Railway Age* of July 23 (page 186), was born at Alma, Wis., on April 24, 1877, and entered railroad service in December, 1893, on the Winona & Western. In 1897, he was employed by the Chicago Great Western as a machinist where he served until 1899, when he went with the Great Northern as a fireman. In 1900, after firing on the Northern Pacific and Southern Pacific he returned to the Chicago Great Western as shop foreman. A year later he was appointed general foreman of the Minnesota North Wisconsin where he served until 1904. Mr. Mailer has been in the service of the Fort Smith & Western continuously since 1904. From 1904 to 1906 he served as general foreman at Fort Smith, and from 1906 until January 1, 1921, he was employed as an engineman. On the latter date he was promoted to master mechanic and was serving in this position at the time of his recent promotion.

J. I. Mailer

Purchasing and Stores

H. S. Burr, general superintendent of stores of the Erie with headquarters at New York, has been appointed assistant to the manager of stores with the same headquarters. **C. K. Reasor** has been appointed to a similar position with the same headquarters. The positions of general superintendent of stores and assistant general superintendent of stores have been abolished. These changes were effective August 1.

Special

John R. Leighty, assistant chief engineer of the Missouri Pacific, has resigned to become group engineer for the western group of the President's Conference Committee on Federal Valuation of the Railroads, with headquarters at Chicago, succeeding to part of the duties of H. C. Phillips, resigned to enter private practice. Mr. Leighty was born at Spencerville, Ind., on September 16, 1870, and was educated at Rose Polytechnic Institute. He entered railroad service with the Wisconsin Central, now a part of the Minneapolis, St. Paul & Sault Ste Marie, in 1891, as a freight bill clerk. A few months later he went with the Chicago & North Western as a rodman, and later became instrument man and assistant engineer. As assistant engineer, Mr. Leighty had charge of construction work

in the Wood street (Chicago) yard and of the track work in connection with track elevation on the Rockwell street branch to 43rd street, Chicago. Later he became roadmaster at Sparta, Wis., and at Carroll, Iowa. In 1899, he went with the Union Pacific where he was assigned to duties in connection with track reconstruction and ballasting work in Wyoming. The following year he entered the service of the Baltimore & Ohio as an assistant engineer, with headquarters at Newark, Ohio. Later he was transferred to Winchester, Va., Parkersburg, W. Va., and Cumberland, Md. In 1907 he was appointed engineer maintenance of way of the Western district of the Missouri Pacific with headquarters at Kansas City, Mo. In October, 1918, he was promoted to corporate chief engineer with headquarters at St. Louis, and later was appointed to the position of assistant chief engineer, which position he was holding at the time of his recent appointment.

H. C. Phillips, chairman of the western group engineering committee, of the President's Conference Committee on federal valuation of the railroads, has resigned to engage in consulting engineering practice, specializing in the valuation and inspection of railroads, with office at 14 East Jackson boulevard, Chicago. Mr. Phillips has been retained in an advistory capacity by the western group of the President's Conference Committee, but will give a large part of his time to private consulting practice. Mr. Phillips was born in New York, on May 6, 1869, and graduated from Princeton University in 1890. He entered railway service in July of the same year as assistant engineer on the New York & Northern, now a part of the New York Central, at Yonkers, N. Y., and was with that road until February, 1893, when he went with the New York, New Haven & Hartford, as assistant engineer on construction, serving first on four-track work at Milford, Conn., and then on track elevation work in Boston. From October, 1895, to 1898, he was engaged in engineering work in New Mexico, part of the time being engaged on location survey work for the Pecos Valley & Northeastern. In February, 1898, he entered the service of the Atchison, Topeka & Santa Fe, as inspection engineer, serving in New Mexico until October, 1899, when he was placed in charge of building branch lines in Oklahoma. In June, 1901, he was appointed assistant superintendent, with headquarters at Fort Madison, Iowa, and from February, 1903, to June, 1904, he was engineer of the Western Grand division of the Santa Fe at La Junta, Colo., and was then transferred to San Francisco, Cal., to complete the surveys and take charge of construction of the San Francisco & Northeastern, with the title of chief engineer of that line. In September, 1906, he was appointed chief engineer of the Atchison, Topeka & Santa Fe Coast Lines, with headquarters at Los Angeles, and in April, 1912, was appointed valuation engineer of the Santa Fe system, with headquarters at Chicago. He resigned that position in August, 1915, to become assistant general secretary of the President's Conference Committee on federal valuation of the railroads, and on January 1, 1917, was elected general secretary of that organization, with headquarters at Philadelphia, Pa. He resigned as general secretary in May, 1918, to accept an appointment as chairman of the western group of the engineering committee at Chicago, which position he now leaves to enter private practice. **George W. Hand,** assistant to the president of the Chicago & North Western, has been appointed chairman of the western group, engineering committee, and **John R. Leighty,** assistant chief engineer of the Missouri Pacific, has been appointed group engineer for the western group, with headquarters at Chicago.

Obituary

J. H. Leyonmarck, mechanical engineer of the Chicago & Alton with headquarters at Bloomington, Ill., died at his home in that city on August 1.

James W. Terry, auditor of the San Antonio & Aransas Pass, died at his home in San Antonio, Tex., on August 1. Mr. Terry had served as the company auditor for more than 25 years.

Thomas S. Howland, vice-president, and formerly secretary and treasurer of the Chicago, Burlington & Quincy, died in the Massachusetts General Hospital at Boston, Mass., on August 8. Mr. Howland had served as vice-president of the Burlington since 1907. During most of this time he held the position of secretary and treasurer also, but resigned this office on May 26 of this year. He was born at North Dartmouth, Mass., on February 13, 1844, and was educated at the Lawrence Scientific School of Harvard University. He entered railroad service on March 1, 1868, in the engineering corps of the Burlington & Missouri River, being engaged on location surveys with that road until 1876. In this year he was appointed secretary to the president of the Chicago, Burlington & Quincy road and served in this position until 1883, when he was elected secretary. On December 16, 1901, Mr. Howland was elected assistant secretary and assistant treasurer of the Chicago, Burlington & Quincy Railway, which had leased the Chicago, Burlington & Quincy road. A year later he was promoted to treasurer and assistant secretary of this company, and on June 30, 1907, he was elected vice-president, treasurer and secretary, with headquarters at Chicago. He was serving as vice-president of the Burlington at the time of his death.

T. S. Howland

THE VALDOSTA, MOULTRIE & WESTERN RAILROAD is being torn up, the business of the line not being sufficient to keep it alive; and one of the problems of the man who is trying to save the material is to keep enemies from burning the trestles. Threats have been made that this means of blocking the road would be adopted in order to prevent the transportation of the material to the eastern end of the line. Armed guards were stationed at the important bridges. This railroad, built about ten years ago, extends from Valdosta, Ga., northwest 42 miles to Moultrie. In its prime it had three locomotives and 19 cars.

Photo by Keystone

Waterloo Station, London, with Holiday Crowds Leaving the City